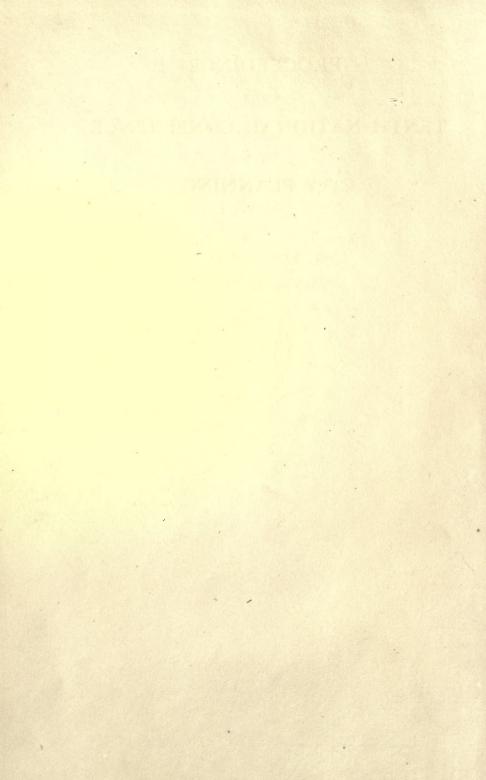
OR THE

TENTH NATIONAL CONFERENCE ON CITY PLANNING:

ST. LOUIS

May 27-29, 1918



OF THE

# TENTH NATIONAL CONFERENCE

ON

# CITY PLANNING

ST. LOUIS, MO. May 27-29, 1918

BOSTON: MCMXVIII

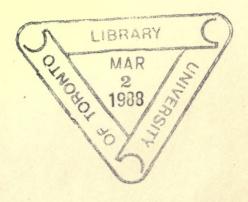
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# CITY PLANNING

# TABLE OF CONTENTS

WHERE THE MISSOURI AND MISSISSIPPI MEET. JOHN LAW-	
RENCE MAURAN, Past President, American Institute of	
Architects, St. Louis	1
AN INDUSTRIAL SURVEY OF ST. LOUIS. E. P. GOODRICH, Con-	
sulting Engineer, New York City	6
THE ST. LOUIS PLAN. HARLAND BARTHOLOMEW, Engineer, City	
Plan Commission, St. Louis, Mo	15
Discussion	25
THE ZONING OF RESIDENCE SECTIONS. ROBERT H. WHITTEN,	
Special City Planning Adviser, City Plan Commission,	
Cleveland, Ohio	34
Discussion	39
INDUSTRIAL ZONING IN PRACTICE. HERBERT S. SWAN, Executive	
Secretary, Zoning Committee, New York City	47
Discussion	55
BLIGHTED DISTRICTS IN ST. LOUIS. NELSON CUNLIFF, Commis-	
sioner of Parks and Recreation, St. Louis, Mo	72
그 맛있다면 물리를 하는데, 하는데 그렇게 이 이번에 없는데 하는데 가면 하는데 살에 하는데	74
	14
BLIGHTED DISTRICTS IN PHILADELPHIA. WILLIAM C. STANTON,	-
Secretary Comprehensive Plans Committee, Philadelphia	76
WAR HOUSING. FREDERICK LAW OLMSTED, Fellow American	
Society of Landscape Architects, Brookline, Mass.; LAWSON	
PURDY, President National Municipal League, New York	
City; LAWRENCE VEILLER, Secretary National Housing	117
Association, New York City 86	
Discussion	122
PLANNING A WAR CANTONMENT, LAWRENCE V. SHERIDAN,	
Philadelphia	125
Discussion	144
CITY PLANNING IN THE ALLIED COUNTRIES DURING THE WAR.	
THOMAS ADAMS, City Planning Adviser to Commission of	
Conservation, Ottawa, Canada	148
Discussion	155
WATERWAYS AND CITY PLANNING. SIDNEY J. ROY, Secretary	
Mississippi Valley Waterways Association, St. Louis, Mo.	160
OFFICERS OF THE TENTH NATIONAL CONFERENCE	164
	164
RESOLUTIONS	

#### TARK OF CONTENETS

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# WHERE THE MISSOURI AND MISSISSIPPI MEET

## JOHN LAWRENCE MAURAN

Past President, American Institute of Architects

When it was suggested that I might have the pleasure of giving you a very special welcome to St. Louis—as one of the craft, so to speak—it occurred to me that here was an excellent opportunity to scatter broadcast some unique facts which the native born St. Louisan seems too modest to utter. I came here quite a number of years ago from New England, but by way of a breezy mid-western city where my two years' sojourn led me to long for home rather than to embark in new ventures in what I ignorantly supposed was a similar mid-western atmosphere. Now, I want to share with you my surprise and pleasure in being welcomed into this hospitable city of dignified age—with a history and traditions worthy of the name—a city whose very name suggested that romance with which the chronicles of its earliest settlers Laclede and Chouteau are replete.

Here I found a social atmosphere permeated with the influence of the hardy French Catholics and the pioneer spirit of the ever westward moving frontiersman, and its resultant is that charm of hospitality which combines the fervor of the Southern article with the bluff sincerity of the West. Stop and consider that St. Louis was an established center of importance when Lewis and Clark set out from here to explore the wilds which were trackless save for the constant flow of the fur traffic to this market. If you have the opportunity don't fail to cross the river to see the picturesque old houses of Cahokia, originally called Notre Dame de Kahokia and Kaskaskia founded just before St. Louis in 1764—(some authorities claim almost a century in priority.)

I wish I could transmit to you the feeling of joyous delight with which the realization came to me that this is no monotonous prairie country, but a fertile rolling country as beautiful as any of its character either here or abroad-with river bluffs above at Piasa and below the City at Salina as striking as the Palisades, while a short motor trip to the South lie the beautiful Ozark Mountains approached through a countryside full of suggestions of Switzerland, and all with a history linked to euphonious names pregnant with meaning. On the Missouri River some miles west of where it pours its silt laden waters into the clear current of the Mississippi there is a bluff called Charbonnier from which one gazes north—as many an anxious lookout must have gazed in days gone by to warn of the approach of the hostile red man—across the Portage de Sioux, a high water short cut between the two streams. Portage lies at the upper end dominating that Heaven blessed farm country of the jet black river soil-where at Curfew the old French bells ring as clear across the water and as sweet, as when the pioneer priests set them up in the 18th century. While it is an undoubted fact that through this fertile country the black soil lies some 12 feet deep, there are off-setting advantages in other parts of St. Louis county for they tell the story of the prosperous farmer who tilled the surface of his farm and from an underlying vein of coal followed the avocation of a miner and still lower down worked a bed of fire clay from which wealth of resources his place was known for miles around as-the "Three Story Farm."

There is in existence a photograph of the first court house built in St. Louis two years before the signing of the Declaration of Independence, and the court house which took its place is worthy of your study as a fine example of municipal architecture. Those of you who have read the "Crisis" (and, by the way Winston Churchill was born in St. Louis) will remember the vivid picture of the slave market which was held at stated periods on the steps of this historic monument. In spite of local corruptions it is pleasant to find Ste. Genevieve, Creve Coeur, Cabanne, De Giverville and

De Baliviere Avenues, Carondelet known in the early days as "Vide Poche" and to come on the outlying ancient town of Florissant. And, before you are through with the record of our City Planning progress the river Des Peres will be more than familiar to you—but, before assuming, as I did, that Kingshighway is a somewhat pretentious prefix for Boulevard, please be assured that it was in reality, as in name, the King's Highway. Like a religious convert I am perhaps more zealous than many native born in extolling the merits and defending St. Louis against misconceptions and so I want you to know some of the actual facts.

While I could marshal a startling array of industries in which St. Louis really does lead the world ending perhaps with the coffin industry, that would indeed be deadly dull, but, it is interesting to know that the Mound City, the original fur center of this country, has of recent date become the fur mart of the world.

Again, I venture to state that you thought as I did that St. Louis is one of the notable centers of German and foreign born population. True, the loyal Germans of this City saved the State to the Union at the critical moment in our Civil War, but the truth to-day is that St. Louis is seventh in German born population with 6.95% with Milwaukee leading with 17.33%, while Buffalo, Detroit, Chicago, Cincinnati and Cleveland come in between. New York leads with foreign born of 41% and again St. Louis is 7th with but 18%.

I will not bore you with the array of facts about our schools, I shall trust that you know them—nor, with that cause for local pride that St. Louis was the first city to organize and equip a regiment of Home Guards and that the overwhelming response in every Red Cross, Y. M. C. A. and Liberty Loan Drive has done for this delightful City what beer is claimed to have done for Milwaukee, or you will doubt my veracity, as well as my sincerity in bidding you thrice welcome to the City whose first Mayor, Wm. Carr Lane was the original City Planner. This prototype of yours said in his first message:—"The fortunes of the inhabitants may fluctuate, you and I may sink into obliv-

ion, and even our families become extinct, but the progressive rise of our City is morally certain. The causes of its prosperity are inscribed upon the very face of the earth, and are as permanent as the foundations of the soil and the sources of the Mississippi. These matters are not brought to your recollection for mere purpose of eulogy, but that a suitable system of improvement may always be kept in view that the rearing of the infant city may correspond with the expectations of such a mighty maturity."

"The old streets must remain somewhat irregular. To straighten them, to make them parallel and cross at right angles, and to reduce the squares to the same superficial contents would be to purchase the ground and lay it off anew, an enterprise that we are by no means prepared for. The question then is—What are we to do? I answer—We can appeal to the intelligence of the ancient inhabitants, nay, to the venerable father of the City himself, and ascertain where the streets originally were. I speak of this because I know of no authentic record of their metes, widths, and bearings, and because encroachments upon them have been so great as not only to render them generally crooked, but in some of the cross streets to nearly obstruct them entirely.

"The erection of one or more wharves and the appointment of an officer for the port seems to me very necessary. We may disregard the hazard that boats are subjected to from the present form of landing, the inconvenience that every one is subjected to who does business there, and the deformity of the object itself, but the pestilential influence of decomposing animal and vegetable matter and such an expanse of mud must assuredly be felt by everybody. The ferries will pass in review, and if they should be considered proper objects of taxation, of which I have my doubts, the present tax ought to be raised. If they are not, you may inquire whether the present rates of fare may not be reduced and still afford adequate compensation for the capital and time employed.

"Health is a primary object, and there is much more danger of disease originating at home than of its seeds coming in from

abroad. I recommend the appointment of a Board of Health."

While the early history of the City and State is crowded with romance, the later history has had and is having a tremendous influence on the nation's history. You may have forgotten that William Tecumseh Sherman was a St. Louisan and that General Ulysses S. Grant lived on the Grant Farm in the log house which you can still visit today from which he brought into town the cord-wood and hav for sale in the plaza in 12th Street. Churchill's book is well named—"The Crisis" for this city was a border city at the outbreak of the Civil War and while its patriotic citizens held the City and State in the Union there was anything but union in the ranks of life long friends, and even families, and coming abruptly to the present I do not want you to overlook the fact that there have been more fighters from the State of Missouri on the side of the allies ever since the war began in 1914 than from any other State. There must be hundreds of thousands of the four-footed fighters, known the world over as the "Missouri Mule" doing his bit in France and Belgium. Capt. Vickers of the Sea Forth Highlanders referred to these kindly creatures with a great deal of humor in his plea for the Red Cross last week. He said the men who came in contact with them always regretted that no "book of instructions" was sent with them, and added that he had been told that a mule had a good heart—but for his part he had never seen a mule's heart and beside that was not the part with which the soldier came in contact.

Missouri is proud of the fact that the first destroyer Fleet which left this country to pursue the U boat was in charge of Commander Taussig of St. Louis, and also that that great naval man, Admiral Sims married a St. Louis girl, and last—but by no means least—we hold valid claim to the citizenship of that intrepid representative of the American Army—General John J. Pershing.

# AN INDUSTRIAL SURVEY OF ST. LOUIS

#### E. P. GOODRICH

Consulting Engineer, New York City

It may surprise you that an industrial survey has anything to do with city planning. The facts are that city planning should fundamentally be based on good economics, and you can't determine your economics without what may be called a survey of the community. To-day it is industry that makes for wealth. Formerly, the United States was an agricultural country, but to-day we are rapidly getting to be a manufacturing nation. Wealth in a community, therefore, is involved in its industry. Your city planning wants to be in the direction of industrial development, therefore the city plan should be based upon an industrial survey. The method of such a survey is nothing different from that of a city planning survey. First, get your facts, next try to determine why the facts, and then what is the proper conclusion from them.

In approaching the survey of St. Louis certain specific questions were propounded for answer. What about the bridge arbitrary, so-called, which is one of the things which people from St. Louis know all about? Those outside of St. Louis hardly know about it. What is the railroad rate situation? What is the answer to the question about Mississippi River traffic? What is the field for an improvement in industry in St. Louis? What is the answer with reference to the so-called blighted district? How should an industrial terminal, if designed, be carried through? These are some of the problems which were suggested and the survey undertook to answer them along the lines already suggested. Everything to-day should point to winning the war. If you

can improve your industry to-day, and that industry is war industry, you are helping by that little bit toward the winning of the war. Therefore, I believe that an industrial survey of any community is money well spent, if it points in that direction. If it points solely to the getting of more profits for the community, it is money lost; but if it points to greater efficiency, greater self-support, it is a good thing. The winning of the war demands co-operation-intra-community and inter-community co-operation. It means raising enough food in the immediate vicinity to support the people in that community-perhaps not the city of St. Louis, but this region. It means, also, manufacturing here the things which are to be consumed here—clothing, agricultural implements for the raising of the harvests in this vicinity. manufacturing those things which have to go into the houses which people will occupy—furniture—the houses themselves. It means the increase of plant efficiency—but such a study cannot ascertain for individual plants, but as a whole what the relative industrial efficiency of the community is.

St. Louis is a great place. It is one of the four great cities in the United States. It is the fur center of the world (just stole it from London). It is the largest manufacturer of plug tobacco. It has the largest hardware house. It is a large millinery center, and the largest shoe house in the world is located here. Those lines should be used as models toward which to increase other lines of manufacturing, so as to make the latter equal, as far as value to the community is concerned, these high spots in St. Louis industry. And the survey makes a comparison, item by item, of the list of commodities which are considered by the Census Bureau, and shows wherein St. Louis is not up the same high level.

St. Louis has great capacity for doing great things. It had the World's Fair and made a success of it. Her push is known all over the country. The way she has put over the Liberty Loan and the Red Cross drive shows that she has a great driving power. That is the same kind of driving power that is needed to revive river transportation, for example,

to build up the industrial and terminal condition here, to revise the railroad situation. The railroads are congested. They are throttled along the river front and up the Mill Creek Valley (which is in the middle of the city). They need expansion. They are now being operated inefficiently because of the physical condition more largely than for anything else, I believe, and some radical measures must be taken with reference to the railroad situation, (just as Mr. Bennett suggested this afternoon with reference to Ottawa). Perhaps a re-location, such as I have had the pleasure of planning for Niagara Falls, taking the New York Central bodily and moving it some distance away—just as is being done in some other parts of the country (Norfolk, for example) is the correct solution of the problem.

I spoke about industrial terminals. There is a need to-day, (I am told by Mr. Gengenbach), for one million feet of space for industrial manufacturing for the war. It is a good thing for St. Louis to need that, but it would be a better thing if she would provide it. An industrial terminal. if properly developed, can serve another purpose. It can be the nucleus or incubator for small industries which may expand into great ones, like the great shoe industry and the woodenware industry, that now exist here. St. Louis should locate not alone one terminal, but perhaps half a dozen in different parts of the city. Before locating these incubators. however, she should carry through the line of action already started in a comprehensive zoning of the community. Those of you who have had an opportunity to examine the industrial map will see how the industries are scattered all over the community. That has certain advantages and certain drawbacks. The advantages are that people can live near the works and thus don't have to travel considerable distances. As was stated this afternoon, some of Ford's men have to ride three hours a day in getting from the place where they live to the factory and back again. Mr. Crawford discussed the situation with a man who had ridden an hour and a quarter when he got off. St. Louis has an ad-

vantage in that she has a wide distribution of these industries, but, at the same time, that wide distribution is apt to be depreciatory of high values of real estate. That is a question which must be settled locally. It is something which such a survey as this of St. Louis cannot examine. It is too detailed. It is a thing for your plan commission to work out, but the thing for St. Louis to do is to push home the thing which the City Plan Commission has started and to work through a comprehensive zoning plan.

This afternoon's discussion with regard to industrial zoning brought out certain pros and cons of a more detailed zoning with regard to industry than has perhaps been employed in other cities, and the suggestion was made that two types of industrial zones be used, one for the heavier manufacturers needing direct railroad communication, and one for the others which do not demand such intimate relationship to the railroad. That is a thing which should be presented to your Commission.

While St. Louis is developing along these lines, she needs the co-operation of other cities, and should reciprocate by giving equal co-operation. For example, the freight rates to the southern ports, Atlanta, Savannah, Tampa, Mobile and New Orleans, both incoming and outgoing, are less than to New York, Boston and Philadelphia. Therefore, St. Louis should exploit the first mentioned ports throughout the Northwest which is the natural district from which tonnage would pass through St. Louis for export at those ports. St. Louis will then get the tonnage, instead of its being sent through Chicago to the North Atlantic ports. At the same time such action will build up the tonnage in those southern ports, so that there will be a return cargo which will probably come back to St. Louis and the Southwest, the West and the Northwest.

In the same way in which St. Louis can co-operate with reference to these export points, she can arrange with other communities on each side of her, one of which consumes and the other of which produces, so that tonnage will pass

through St. Louis from one side to the other, like iron from mines in the North, the copper in the West, the wool market, in the West, and cotton in the South. St. Louis should have more blast furnaces in this vicinity so that iron ore produced in the North will come here for manufacture and go South for consumption. She should arrange that tobacco brought in leaf to St. Louis is manufactured here, not only into plug. but into other varieties, and shipped to the Northwest. Copper coming from the Southwest should be manufactured here into electrical machinery and shipped East. coming from the Montana district could be fabricated here and shipped East, either as textiles or clothing. Also, she should make right here in St. Louis the clothes which the St. Louis people wear. One man (I don't know how accurate it is) has figured that if the wool were stopped here. and the cotton be brought from the Oklahoma district, and manufactured here, instead of being shipped through to New England and back again, and if the consumer got all of the saving which might be made, he would save at the rate of one suit of clothes a year. That is rather extraordinary and it is obviously improbable that all the saving would go to the consumer. He doesn't usually get 100% return like that. Nevertheless, that shows the opportunities for building up that kind of an industry right here in St. Louis. Because of this possibility with reference to shipments through St. Louis from all directions, St. Louis had adopted as her slogan THE CITY SURROUNDED BY THE UNITED STATES. She has greater opportunity in that respect than almost any other large community. Chicago is located in an elbow, she gets congested traffic because it has to come around the point of a lake. New York City is located in an elbow, traffic has to come around an angle from New England to the South. Almost every other large city has hardly more than a half hinterland behind it. St. Louis has a 100% hinterland and should be able to capitalize it in all directions.

In order to build up these various industries St. Louis needs an injection of skilled labor. She has been importing

labor very rapidly of late, but she needs more, and for that skilled labor she must provide proper housing. That particular phase of the situation is one which should get the attention of a special housing commission, I believe, here in St. Louis. There seems to be a dearth of what may be called middle class houses, and a special study should be made of that particular problem.

Turning now to the river traffic. The history in this country has been almost identical with that in Europe. Originally river transportation was the only transportation. Then turnpikes were built, but it was always costly to operate over them. It is said that about 1800 it cost a dollar a ton-mile to transport commodities from Baltimore to Pittsburgh. You can transport them now for one mill per ton per mile. You can see the advance in a hundred years. River transportation was the cheapest after the steamboat came. Before that time it had been almost all downstream. Men in the Ohio Valley, at Pittsburgh, for example, would load a flat boat, float down with the current, selling their produce en route, and finally getting to New Orleans, would dispose of the flat boat, take ship coastwise to Philadelphia or Baltimore and go back home overland by horseback or wagon, taking with them such commodities as they wanted to sell to their own immediate vicinity. It was an Eastern trip by way of the South. As soon as the steamboat came which could negotiate the current. that south-bound travel practically stopped. Even before the slump of steamboat travel, the north and south traffic on the Mississippi was very much lessened, so that about 1830, for example, the Ohio Valley produce, which had formerly gone South for the planters and for shipment to Europe, had practically ceased moving in that direction. It came east by river, and as soon as the railroads came into competition with the water lines it was taken off from the river and put aboard the railroad cars. There was thus a natural cutting off of river travel north and south, and through competition a reduction in river travel east and

west. In Europe, when the railroads entered the problem. there was this identical depreciation. Of late there has been a revival in river transportation abroad and to some extent in this country. Twenty years ago it started in Europe. It started there because the governments saw that control of all traffic facilities was essential to the well-being of the community. They, therefore, regulated the railroad travel and usually subsidized water travel, directly or indirectly. We in this country did not reach the point where that action was necessary until just a few years ago, when freight congestion became acute because the railroads had become saturated, so that they couldn't take any more tonnage. Then we began to think about the revival of water transportation. Then it was costing us money, because of the burden on the community at large, due to the congestion on the railroads. Had we foreseen that, and, while perhaps not absolutely maintaining the river transportation at its full amount through subsidy or control, had we at least maintained a hold on the situation, so that we could immediately have expanded our water transportation, we would then have been saved that burden due to the congestion on the railroads.

Now, when water transportation is being revived, when iron ore is being brought down from Minnesota to St. Louis, when the government will probably build more barges to operate on the rivers north and south, it behooves St. Louis to see that there isn't any future slump, which reaction will be just as inevitable as the past one unless there is some artificial means of holding matters. It may be by regulation, it may be by subsidy, it may be by some other device, but St. Louis should today start planning for that future, and by so doing she will reduce the possibility of congestion and the loss to society and to her as a part of such society.

Coming down finally to the local railroad situation, I believe that the question of coal rates from the Illinois district into St. Louis across the bridge is one which has not been attacked from quite the right angle heretofore. I be-

lieve Governor Folk, with his experience with the Interstate Commerce Commission, is now going at the problem from a different angle, from an economic angle, to prove that there is unreasonableness on the basis of actual cost; that the transportation from an inside group of mines within a zone of twenty-five miles from St. Louis, for example, is so great as to be unreasonable, and that there can be very little logical reduction in that rate. I believe, too, it can be demonstrated that a discriminatory absorption of switching charges now exists among the different roads, and that when all of these discriminations are wiped out and when the proper rate is applied to the inside, or what may be called the baby zone, the bridge charge which now makes a differential against St. Louis in favor of East St. Louis will be wiped out. I believe that the method of approach through the suit before the Interstate Commerce Commission will this time win.

In order to improve along industrial lines, in the first place there must be labor. St. Louis should therefore foster immigration. That immigration must be made American, however, in order to adapt itself to to-day's conditions. With fostering of immigration there must be instituted an Americanization educational campaign. I do not mean simply one to naturalize the individuals, but to make them real Americans, to instill into them American ideals, give them an idea of what America is doing to-day for freedon and for the world at large in the way of industry. That means that there shall be education, there shall be technical classes of various kinds to raise the common laborer up into the technical, skilled class; that there shall be civic centers instituted, to which the laboring man, immigrant and otherwise, can go for his recreation, and for advice on various lines -following out the best examples in Boston and elsewhere. I believe that more commercial courses should be instituted in the schools and universities to study these possibilities of commercial interchange passing through St. Louis; that some device shall be arranged, (either through the Chamber

of Commerce or the banking interests), to assist small industries financially (and larger ones too), so as to build them still larger.

These phases of education and of advancement I believe will make St. Louis one big community, St. Louis proper so large that it will over-shadow any possible competition of East St. Louis: and, by the way, to-day St. Louis has been growing each decade by an increment which is larger than the total outside of St. Louis proper. For example, the growth of St. Louis during one particular decade studied was 62,000, whereas the whole population outside of St. Louis was only about 65,000 during the first part of that decade, so that the competition with East St. Louis is a matter which should be overcome—could be overcome by a little more energy and push, such as St. Louis has demonstrated repeatedly in the World's Fair, Liberty Loan and otherwise. If these several suggestions, which will be contained in the report, be followed, I believe St. Louis can make herself into one of the greatest industrial districts because she is so completely surrounded by the United States. by a 100% hinterland, so that she will be a 100% community.

# THE ST. LOUIS PLAN

#### HARLAND BARTHOLOMEW

Engineer, City Plan Commission, St. Louis, Mo.

Since 1906 there has been constant interest and activity in city planning in St. Louis. The movement has been readily supported by the municipality, by civic organizations, by business men and by public spirited citizens because of a firm conviction that city planning would actually

prove of substantial economic benefit.

In 1907 there was published by the Civic League, "A City Plan for St. Louis," one of the earliest and most complete reports on city planning. The analytical and descriptive character of this report as well as the report of the City Plan Association published in 1911, served well to lay the foundations for an intelligent and widespread community appreciation of city planning problems. In 1912 the official City Plan Commission came into existence. For two years much of the Commission's energy was given to the promotion of the Parkway project.

The defeat of the Parkway Plan by a vote of 32,317 to 42.846 served but to further the general campaign of the city planning education and to strengthen the determination for actual accomplishment. A new City Plan Commission was appointed following the Parkway election and in the early part of 1916 a definite program of procedure was adopted for the preparation of a comprehensive city plan. This program was formulated to correspond with the outline approved by the National Conference on City Planning in 1915 (Detroit Proceedings), and consisted of the following items:

- 1. River des Peres
- 2. Street Plan
- 3. Districting or Zoning
- 4. Transit and Transportation
- 5. Recreation
- 6. Housing
- 7. Civic Art (Including Grouping of Public Buildings)

The Commission proposed to prepare separate studies on each of the seven projects in the order named, publish reports on each subject as the study was completed, the several studies to be combined into one comprehensive plan upon their completion. It was estimated the entire work would take three years, and today, after two years of endeavor, I may say that this work is practically on schedule.

#### THE RIVER DES PERES

Coursing through the western and southwestern extremities of the city is a small stream known as the River des Peres. In its normal state it resembles a small creek or brook. During periods of heavy rainfall it assumes the proportion of a small river, causing much damage to life and property. Of a watershed of 70,000 acres only 16,000 are within the city limits, but the lower end of the stream being here, the city is subjected to the principal difficulties. Furthermore, the stream is a health nuisance, being an open sewer in certain districts. The flood and pollution troubles have reached serious proportions only within the past five or ten years, since only within that period has the watershed been at all extensively occupied by homes and factories.

Ordinarily this condition would not seem to be a city planning problem but rather a problem of drainage. Actually, however, it is both, for the presence of this stream in its present condition has done much to affect the city's growth. A great proportion of the watershed of the River des Peres is unimproved though actually as near the city's



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center as many of the best residence districts, having failed to develop largely because of the flood and pollution conditions. St. Louis needs cheap land for industrial development and will need additional land for residential expansion. The River des Peres Plan as prepared by the Board of Public Service and the City Plan Commission, will meet these needs, will solve the problems of flood and pollution and permit a more symmetrical development of the city.

The River des Peres Plan provides for-

A reinforced concrete c					\$7,200,000
A Connecting Railroad					1,000,000
A Driveway					1,275,000
A Connecting Viaduct					440,000
Development of Certain	Major St	reets			
Extension of Transit L	nes				

Total Cost

\$9,915,000

The channel and sewer will provide for all sewage and storm water disposal. The connecting railroad, to be built and owned by the city, will make possible the development of certain areas for industrial purposes. The Driveway will make use of land unsuited for residence or industry and will be a fitting extension of the park and boulevard system. The connecting viaduct will open up a much needed line of communication between two sections of the city now practically separated. The development of certain major streets will afford vehicular and transit communication necessary for the development of the whole southwestern territory and need involve no general public expense. In fact, several of the major streets here are now being opened by dedication or condemnation. The total cost of the River des Peres Plan, \$9,915,000, is to be raised by bond issue, an election for this and other projects having been called for November. 1917, but postponed until after the war. The total cost is to be borne by the city rather than assessed upon individual owners because there is little local benefit from the driveway

within the city limits and the city cannot assess benefits for a railroad under present laws and the sewer is of general benefit. The local connecting sewers will be paid by special tax assessments, some of these latter already having been built.

#### THE STREET PLAN

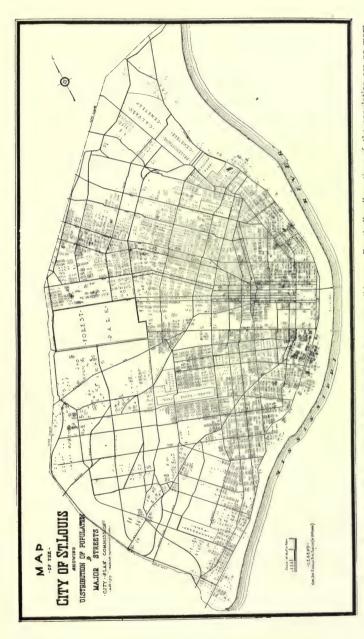
Many of you are already familiar with the report on major streets which describes the plan more fully than I can now undertake to do. In principle, the plan is to establish certain radial or arterial streets leading outward from the business district, and certain cross town streets of an east and west and north and south direction, no more than one-half mile apart, all of sufficient width to accommodate the traffic that may be expected upon them, the major streets being so located as to afford easy means of communication between any two parts of the city. The further development of the street plan will be the reduction of roadway width on the minor streets, in between the major streets, the laying of less expensive pavements on those streets, leaving more room for grass and shrubs, and insuring their consequent more stable and desirable development for residence purposes.

The development of the street plan is already begun. By reducing roadway width from 36 to 26 feet on minor residential streets a saving of \$150,000 in special taxes was made in 1917. This saving will be increased each year. In the opening and widening of certain major streets considerable progress has been made, thirteen projects now being under ordinance or for which ordinances are pending, as follows:

Widening Washington Avenue from Jefferson to Grant . \$ 552,511 Opening and extension South 12th St. from Chouteau to

Widening Watson Road from Old Manchester Road to City Limits

Opening King Highway from Carondelet Park to Christy Park



Plan No. 9. — The major streets have been planned for greatest possible use. Practically all portions of the population are no more than one-fourth mile from a major street.



Opening, widening and extension of Hampton, Billon and Sulphur Avenues into a continuous thoroughfare from Forest Park south to Gravois Avenue

Widening Vandventer Avenue from Manchester to Market

Widening Morgan Street from 12th to 14th

Widening Franklin Avenue from 9th to 4th

Cut-off between Lawton, Pine and West Pine Boulevard to Grand Avenue

Cut-off between Morgan St. and Delmar Boulevard at Grand Avenue Widening Lindell Boulevard from Channing to Grand Avenues

Unless unusual conditions prevail, these various openings. widenings and extensions will be paid for partly by the city and partly by the locally benefitted property owners in accordance with the table of proportionate street widths and costs shown in the report already referred to. In the outlying districts certain major street openings have been secured by dedication.

#### DISTRICTING OR ZONING

The work of devising a plan for controlling the height, area and use of buildings has been completed and is now before the Board of Aldermen for adoption. The monumental work of the Commission on Building Districts and Restrictions of New York has largely been our guide in preparing the zoning plan for St. Louis. While similar in form the zoning plan for St. Louis differs in many of its details.

There are five height districts as follows:

- 1. Forty-five foot height district
- 2. Sixty foot height district
- 3. Eighty foot height district
- 4. One hundred and twenty-foot height districts
- One hundred and fifty foot height districts

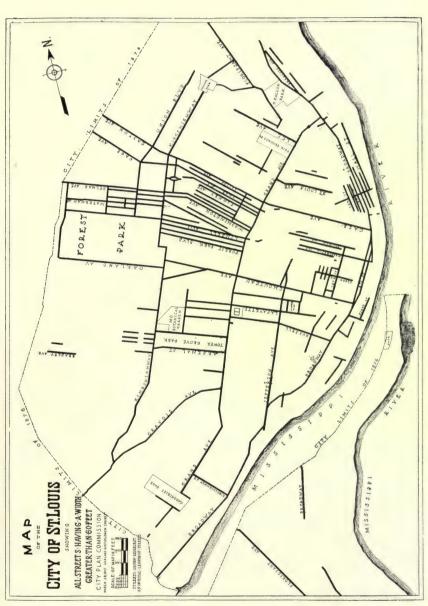
This is largely a city of two story buildings. Only in the downtown business district and in the apartment house district are higher buildings to be found. At first we con-

sidered making the height limitations proportional to street width and permitting certain set backs, but after due consideration it was decided best to fix flat height limits of 45, 60, 80, 120 and 150 feet. These were applied in general to the one and two family house districts, the commercial districts, the industrial districts, the high value inner industrial district and the downtown commercial districts, respectively.

There are four area districts as follows:

- a. 100% of lot covered by buildings on corner lots and on first story of interior lots. Rear yard of at least 10 feet required above first story for buildings on interior lots. No other yards or courts required, but when provided they must be of certain dimensions proportional to size of building.
- b. 100% of lot covered by buildings on first story. Above first story, buildings on corner lots to cover not more than 90% of lot and not more than 80% on interior lots. Rear yard of at least 10 feet required. No other yards or courts required but when provided they must be of certain dimensions proportional to size of building.
- c. 75% of lot covered by buildings on corner lots, 60% for interior lots. Rear yard of at least 10 feet required. No other yards or courts required, but when provided they must be of certain dimensions proportional to size of building.
- d. Building area of corner lots 60% for first story. 50% above, and for interior lots 50% for first story and 40% above. Rear yard of at least 15 feet required and one side yard of 3 feet on lots less than 30 feet wide and 4 for wider lots.

These four area districts include in general the high value downtown commercial and industrial district, the large outer industrial district, the commercial and tenement



Plan No. 5.—Lack of city control of land subdivision in St. Louis has resulted in the most haphazard distribution of streets over 60 feet wide, shown herewith. The many miles of wide streets, properly connected, would have made a most desirable and complete system. Now there is no system and great economic waste is evident.



districts and the one and two family house districts, respectively.

There are five use districts as follows:

- 1. First Residence District
- 2. Second Residence District
- 3. Commercial District
- 4. Industrial District
- 5. Unrestricted District

The first residence district is for one family houses exclusively. The second residence district is for residences and tenements, hotels, institutions, etc. The commercial district is for stores and shops (being usually the major streets not within the manufacturing sections). The industrial district is for all forms of industry not considered objectionable because of noise, odors, smoke or dust. In the unrestricted district are permitted all forms of use, except as now regulated by ordinance. The unrestricted districts are chiefly along the railroad lines and the river front.

The interesting provisions of the zone plan which cover a multitude of sins, and are self explanatory, are—

- (1) "No tenement, hotel, lodging or boarding house shall hereafter be erected in any part of the second residence district occupied exclusively by one and two family residences, without the consent duly acknowledged in writing of the owners of the majority of the property located within that portion of the block having frontage on the street where it is proposed to erect such tenement, hotel, lodging or boarding house.
- (2) "All rooms or open spaces in any building hereafter erected, in which persons live, sleep, work or congregate, shall have a window, windows or skylight, opening on to a street, alley, legal court or yard and said window, windows or skylight shall have a net glass area of at least 10% of the

floor area of such room or open space; provided, that if it be impracticable to provide such windows as aforesaid, such rooms or open spaces shall in lieu of such windows, be ventilated by an approved mechanical system, which shall effect at least six complete changes of air per hour, during occupancy; provided further, that the provisions of this section shall not apply to rooms in which the unoccupied space exceeds 1000 cubic feet for each occupant; and provided further that the provision of this section shall not apply when the introduction of such light or ventilation would prove injurious to the manufacture or storage of any article or commodity.

#### TRANSIT AND TRANSPORTATION

The studies on transit and transportation are not yet completed. Counts of passengers, seats and cars on all the transit lines of the city are now being made. The completed study suggesting rearrangement and extension of existing lines and additional rapid transit routes will be published this year.

Before undertaking its study of the transportation situation the City Plan Commission felt the need of securing as complete an analysis of the industrial situation and position of St. Louis as it was possible to attain. As this was somewhat beyond the technical scope of city planning, the Commission suggested to the Chamber of Commerce the advisability of an industrial survey covering the following points:

- 1. Analysis of the present rail and water terminals of St. Louis showing their advantages, needs and future expansion.
- 2. Analysis of the terminal charges in the St. Louis district, with scheme for readjustment to permit most effective interchange of commodities, and development of the entire district.

- 3. Position of St. Louis with respect to other industrial and commercial centers of the country, including analysis of rail rates and differentials.
- 4. St. Louis' position as a center for certain kinds of industry with facts showing who and how certain.
- 5. The relation and position of St. Louis in the development of the Mississippi River traffic.

This is being done by Mr. E. P. Goodrich for the Chamber of Commerce and has already been outlined to you this evening by Mr. Goodrich.

#### RECREATION

The recreation study has been completed and published. Its object was to determine so far as possible the actual conditions of supply and demand for public recreational facilities. The following types of service were considered:

Community Centers Playgrounds Neighborhood Parks Large Parks Outer Parks and Boulevards

The actual service being given by each type was described and recommendations were made for extension of present facilities and their enlargement to meet the needs of parts of the city now inadequately supplied. As a result of this work our future parks, playgrounds and community centers will be located according to where they will perform the greatest amount of service.

#### HOUSING, AND CIVIC ART

The studies on housing and civic art are yet to be made.

#### LEGISLATION

The following laws were prepared and introduced at the last session of the legislature but failed of passage:

Constitutional Amendment on Excess Condemnation Building Lines Procedure for Land Condemnation outside city limits Establishment of a County Plan Commission Establishment of a City Plan Commission in small cities and towns of the State

#### POPULARIZATION AND CO-OPERATION

It has been the City Plan Commission's constant object to make known the full reason for all of its work as well as the plans themselves, realizing that only by so doing could any accomplishment be secured. Public hearings have been held at the City Hall and in various neighborhoods. Over one hundred lectures, mostly illustrated, have been given before various organizations. Forty thousand copies of the seven more recent reports have been distributed. Numerous display stories and constant news articles have appeared in the public press. The city administration has given constant support to the advancement of city planning projects that have come before it.

Individuals, organizations and the press have been quick to support various parts of the plan as they have come up for official action and it may fairly be said that in only one or two instances has there been a well-defined difference of opinion or objection to these projects.

The City Plan Commission recognizes that the ultimate accomplishment of a comprehensive plan, or any part thereof, is a matter of considerable effort usually accompanied by irritating delays. The adoption of a program and persistent following of it will eventually produce results. Once the first accomplishments of the plan are secured, the balance must follow as a matter of good business and sound logic,

provided, of course, the plan has been intelligently conceived and is properly understood.

#### COST OF THE PLAN

For the preparation of the comprehensive plan the cost has been met entirely by the city through appropriations to the City Plan Commission. The total appropriations since adoption of the program above outlined have been \$64,200, distributed as follows:

April 1, 1916-March 31, 1917	\$13,500
April 1, 1917—March 31, 1918	15,500
March 1, 1917-March 31, 1918 .	11,700 (Zoning)
April 1, 1918—March 31, 1919	
	Zoning)

Total

\$64,200

#### DISCUSSION

## S. H. HARE, Kansas City:

As I understand it, Mr. Bartholomew in his "use districts" has included the downtown retail district under the industrial district. This does not seem to safeguard adequately the retail industries. It leaves a loophole for the same trouble that the zoning commission had in New York.

### MR. BARTHOLOMEW:

We found that in the downtown retail district there were many industries, and that any differentiation between industry and commerce downtown would have resulted in a financial hardship upon property owners. If you think of all the big cities in the country that have a retail district, you will agree that New York City, which is really in a class by itself because of its size, is the only one which has a financial and commercial center as distinct from a retail center. Until St. Louis gets the size of New York, I believe that it cannot

support both industrial and financial districts as distinct from a retail district.

The very interesting thing about St. Louis is that its business district is not by any means the physical center of the The downtown district of both New York and Chicago is the physical center of those cities. It is logical to assume that some day our retail district may jump to Grand Avenue in the general vicinity of Olive Street where the physical center of the city is. By doing so the retail stores would shorten the distance between themselves and their patrons two miles. and shorten all their hauls two miles. But we have not enough industry and commerce to fill up the gap in the downtown business section if the retail business moved out. We would have the biggest of all blighted district problems. The saving feature is perhaps this: While the downtown business district is not the physical center of the city, it is the physical center of the metropolitan district taking into consideration the suburban towns on the east side.

The development of our major street plan would tend to bring the downtown business section more into the physical center of the city, and when we get rapid transit this will be still more true. I believe it is to the economic benefit of the entire municipality for the city to discourage any development in the way of transit lines or street development, which will be a disadvantage to our downtown business district.

### MR. OLMSTED:

I noticed a provision in the proposed ordinance requiring a side yard on one side of every lot not less than three feet wide. Upon the face of it it seems a very undesirable general requirement. We have introduced quite different provisions in the standards for housing development controlled by the federal government. There we have set up as desirable a space between houses of not less than sixteen feet, saying that where the space must be on account of values curtailed materially below that, it is better to build row houses without spacing. Those of us who attended the Conference at To-

ronto, I think will never forget the extraordinary custom which prevails in some parts of Toronto as a result of the persistence of the idea of detached houses under conditions of land value which result in spaces between houses of 18, 12 and even 9 inches. These spaces are of course nothing short of nuisances. I should like very much to hear Mr. Bartholomew's explanation of this requirement.

#### MR. BARTHOLOMEW:

This requirement is in the D area district which corresponds to what might be called the E area district in New York City. It is, in principle, the one family house district or the one and two family house district. A space of three feet between houses for lots less than 30 feet wide and four feet for lots wider than thirty feet was established as a minimum. I do not know whether the thought occurred to us that this requirement might establish a custom to use only the minimum width. We were thinking only of securing some space between buildings.

### MR. OLMSTED:

I feel very strongly that when you came down to a width of three feet between detached houses it would be better to have none. Better build row houses and get more space on the front and rear lots. In other words, where you have window space, get a good access of light and air and a reasonable degree of privacy.

## ARTHUR C. COMEY, Cambridge, Mass .:

In the tentative ordinance being drawn for Cambridge, Mass., we have a similar provision requiring a seven foot space for a three story building and a six foot space for a two story building, but we also provide that no windows other than fire windows can be put in a wall nearer than that distance to a lot line in any event, and we hope therefore that the owners will have sense enough to combine their yards.

## ROBERT H. WHITTEN, Cleveland, Ohio:

Under the New York zoning plan, in the E district there is a provision for a side yard 21/2 inches for each foot of height. This works out so that for the small house the vard is in most cases not more than about four feet on one side. But this requirement of side yard is coupled with a limitation that only thirty per cent of the area of the lot can be built upon. Under these two requirements it is usually the case that if a man covers a large proportion of his lot and leaves only about four feet on one side for a side yard he will have to leave a larger space on the other side. Houses are usually built so as to provide the minimum space on the north side of the lot. which, combined with the larger space on the south side of the next lot, would give a fair-sized yard between buildings. I assume that in St. Louis the side yard requirement coupled with the limitation of per cent of lot area to be built on will provide a fairly open space between buildings.

## J. C. Murphy, Louisville, Ky .:

In Louisville we have a great many narrow lots and a great many narrow passages three or four feet wide, the houses being built long and narrow. We find that where three or four feet is fixed as a minimum, that soon becomes the standard. Then, with the overhanging cornices, you have a tunnel, dark and damp. It is really better to have no passage at all than to have it as narrow as three or four feet.

## MR. OLMSTED:

As I understand the provision, it is not in case a space for a side yard is left it shall have a minimum of three or four feet, but that there shall in every case be a space of that minimum width. This prevents the owner who may prefer to build a row of four houses with adequate air space at either end of the row from doing so. While the custom is and may remain for a long time to build individual houses in St. Louis there is surely a certain amount of what is ordinarily called

speculative building, that is where houses are built in one operation. In such cases to acquire a side yard on every lot with a minimum as low as three feet is questionable. I think that the form of the requirement that Mr. Comey referred to in the Cambridge regulations is the better one, that is if there is a side yard it will have a certain minimum width.

## THOMAS ADAMS, Ottawa, Canada:

In Canada we would practically consider in this question individual lot owners. Speculative building is almost entirely confined to more central districts in towns or cities. In the outlying districts four separate owners of four separate lots are not likely to build four houses together. If you have only a thirty foot lot and take ten feet of it for open space at the side of the lot you must have a building only twenty feet wide. You lose the whole advantage in air space by making the building deeper and narrower. I think on the whole, if you can restrict the building to two rooms deep and allow it to be higher, then the width of the distance between the building is not so important. The only question then is the overlooking of one house from the windows of the other. The question becomes very important when you build a house three rooms deep.

### Mr. Bartholomew:

One other condition which contributed to this provision in our ordinance is that in St. Louis we have a type of building commonly known as the "flat." Our usual size lot is thirty by one hundred twenty-five feet, very often one hundred fifty feet deep and in many cases two hundred feet deep. On all of these lots a very common construction is flats, two stories high, one family to a floor, and often two of these structures combined, called a double flat, are built on two lots. A builder will build a dozen of these double flats and under the requirement in the ordinance it works out that there is at least six feet between buildings, usually more, even eight

or ten feet. Because of the depth of our lots we have as yet no custom, and I think there is no desire, to build row dwellings in St. Louis.

#### MR. OLMSTED:

After Mr. Bartholomew's explanation the limitation in the ordinance seems to me all the more to be very narrow. Considering the width and depth of lots here, I still think very strongly that it would be wiser, in fixing a minimum for side yards, to make it at least five feet for two story buildings and six feet for three story buildings.

## A. W. Crawford, Philadelphia:

I would like to ask Mr. Bartholomew if there is any requirement in the ordinance that the two open spaces or the two side yards of adjoining lots shall be adjacent.

## LAWRENCE VEILLER, New York:

I am very glad this question has been raised. There isn't any feature of a housing law that gives rise to so much difficulty or trouble as this particular effort to secure an adequate distance in side yards between adjacent buildings, and it is difficult because the property conditions vary all over the country, and because the custom, desire and method of building vary so in each city, and it is difficult because of the very important constitutional questions that are involved. I want to tie down one or two little things that do not seem to me to be tied down. I understood Mr. Olmsted to state the proposed ordinance as of this form: to require in every case a man to keep his building so many feet away from his side lot line.

I want to say it can't be done legally. There isn't any question about it. The courts have decided it. Any one familiar with the police power will tell you it can't be done, because the court will set it aside as unconstitutional. That is one point. The other point is this: if a man can't build a

building on the lot that he has, that is going to have adequate light and air in every room, and be occupied by human beings for dwelling purposes, he ought not be allowed to build it. There is nothing to stop him from getting two lots. On the other hand, it is a very difficult question, because the conditions vary. In one city a house may be built squarely in the middle of the lot, leaving the open space equally on both sides. In other cities a large side yard is demanded on one side and a small one on the other. This latter ought to be permitted provided you are going to get adequate space between buildings. But the mere requirement that you shall keep away from the side line will not help, because the man next to you has the right to do what he wants to with his lot and to put his house up to the minimum distance from the lot line. I think in your ordinance you should go slow on providing minimum spaces that are not adequate. The minimum will become the established normal space. Laws of this kind will become specifications whether you want them to or not. Ten feet for even a one story building is grossly inadequate for a side vard. Nor will a regulation concerning the percentage of the lot to be occupied remedy your evils. It doesn't profit you a bit to know that you have an adequate back yard 75 feet deep that is going to benefit your rear rooms. That back yard will not help your side rooms, nor will the front vard help you if you have an inadequate side yard. The only way to get proper light and air from the side of a building is to put it there and provide a reasonably adequate space.

I should also like to refer to the constitutionality under the Eubank decision of the requirement in the proposed St. Louis ordinance that apartment houses cannot be built in a first-class residential district except by the permission of other private individuals. The supreme court of the United States has ruled on that and declared it unconstitutional.

EDWARD M. BASSETT, New York City:

The Borough of Queens is one of small homes and the recent development of multitudinous small one and two family

houses well illustrates the subject we are discussing. They used to be built three feet apart with a narrow alley between which bordered on the nusiance. You cannot sell houses now built that way. Then they put up block houses that took up the whole width of the lot and there was no access to the rear excepting through a cellar. Those have not sold very well lately because people cannot keep automobiles in their vards. At last the borough has a standardized sort of small house of three different types. The more liberal provides space enough on one side to allow an automobile. In the next type is a house sufficiently far from its neighbor so that the two by mutual easements can allow an automobile in between them. The width of the space in this second type of houses is about eight feet. The other type is a block house with an automobile alley in the rear coming out on side streets. which alley is used by the houses abutting thereon by mutual easements. If you do not build one of these three types today in the Borough of Queens you cannot sell the house.

Mr. Veiller has brought up the Eubank case. There is so much instruction in it to other cities that want to take up zoning that a word about it is in point.

The proposed St. Louis ordinance has a requirement which makes it impossible to put a hotel into a second-class residential district without the consent of some portion of the owners in the area affected. The authority for any requirement comes from the police power of the state and individuals cannot say by a consent what is the police power of the state. It is perfectly plain that that is getting at the preferences of the surrounding people, and not getting at what is for the public safety, morals, health, or general public convenience, and therefore the court very properly says that zoning cannot be done by the surrounding people; but the way you want to manage that, and the way I think Mr. Bartholomew must manage that in St. Louis, is this: that when seventy-five per cent of the surrounding people consent, then the Board having discretion may make that, or may not make that possible for a hotel or an apartment house. In other words, as long

as a body properly clothed with legislative authority has the final word, following the majority consent, then it is legal. If you leave off the final word of the legislative body and place it squarely on the consent of the people only, then you have something that is not constitutional, because it is not under the police power.

#### MR. VEILLER:

We are on pretty shaky ground as far as the question of constitutionality goes. The supreme court reviewed its decision in the Eubank case and did not rescind one iota the cardinal principle that under the police power one man or set of men cannot say what shall be done with another man's property. I think it is a good rule not to take any unnecessary chances in the hope that the supreme court will uphold provisions which were decided, at least in principle, to be unconstitutional in the Eubank case.

## THE ZONING OF RESIDENCE SECTIONS

#### ROBERT H. WHITTEN

Special City Plan Adviser, City Plan Commission, Cleveland, Ohio

The protection of the homes of the people is probably the primary purpose of use districting. While many purposes are served by an orderly and well thought out plan of city building, a first consideration in such plan is that there shall be some separation between residential use on the one hand and all forms of trade and industry on the other. In providing for this separation, however, it is essential to remember that trade and industry form the basis of the city's growth and that the areas devoted to such use cannot be narrowly confined without stopping the normal growth of the city. Nothing should be done to hinder and everything should be done to insure that the city shall play just as big a part in the world's work as it has the facilities and foresight and ability to perform.

A first essential in residence districting is, therefore, the determination of the location and extent of the areas that will be needed for trade and industry. Here great help may be obtained from the study of larger cities of such size as the city in question reasonably may be expected to attain. For example, if it is proposed to zone a city of 500,000 that has had a steady and fairly rapid growth with good prospects for continuance, the study of Philadelphia, Chicago and New York will be helpful. Such study will help greatly in determining the normal extent of the future central business district and the location and extent of the areas that should be left for industrial development.

It is of doubtful value to attempt by zone regulations to preserve for residence purposes small built up areas that

stand directly in the way of the normal and necessary expansion of the central business district. A small residential oasis in a large business district should be protected only when this can be done without inconvenience to the conduct of business and the movement of street traffic.

But while trade and industry constitute the primary purpose for the bringing of people together in large cities, it is no less true that good home conditions are essential to the welfare and prosperity of the city. In fact, this war has shown that good housing is absolutely essential to efficient production. The city in the future will have to give much greater consideration to all questions affecting the homes of its people if it wishes to maintain its productive efficiency.

Residence districts must not only be protected against invasion by trade and industry but they must be protected against mutually antagonistic types of residential development and against a too intensive use of the land. We want our home sections to have as much light, air and garden space as is consistent with a plan for the convenient housing of the entire population for a considerable period of years within the areas accessible and appropriate for housing purposes. We want to distribute the population as much as practicable, but at the same time we do not wish to force people who for business or other reasons need to live close to the central business sections either to pay very high rents or to go to much less convenient locations. As a city reaches metropolitan size the demand for housing space near the central area becomes so great that the only way to make that location available to any but the wealthy is to permit a more intensive utilization of the land. Were it not for the ability to pile one dwelling on top of another, rents would be prohibitive in these central locations for the great mass of the people. It is, therefore, necessary in a zoning scheme to provide for a zone of multi-family dwellings adjacent to the central business district.

But apartments and tenements are in demand not only because a large number of people wish to live within a very

limited area near the center of the city, but also because an increasing proportion of the people actually prefer apartment life, even though there may be abundant land conveniently at hand to house everyone in single family detached dwellings. A family of two, three or four adults often finds the apartment more convenient and economical in many ways. There is a place for the apartment in the suburbs of a city as well as the congested center. But where apartments are built in suburban sections they should not be permitted to crowd the land and steal light and air from their neighbors. They should in so far as practicable be restricted to areas that will not interfere with the normal private house development and they should be required to leave approximately as much open space per person housed as is required in the case of the private house development. In this way congesting of population will be prevented and private house sections will be protected without denying the apartment house to those who find that method of living best suited to their needs.

This general problem of protecting the residential sections from mutually antagonistic types of residence use and of preventing congestion of population may be approached in four ways:

- 1. Direct limitation of the type of dwelling.
- Limitation of the percentages of lot that may be covered, and regulation of the size of courts and yards.
- 3. Limitation of number of houses or families per acre.
- 4. Requirement of a certain minimum land area for each family housed.
- 1. Under the first method, that of direct limitation of the type of dwelling, a zone may be established, limited to single family detached houses, another zone for houses in rows and two family houses and another zone for all classes of dwellings including apartment houses. This is a simple and direct method and one proposed in various drafts of

zoning regulations now under consideration. It is the method to which we have become accustomed in private restrictive covenants. It is, however, somewhat rigid and inelastic and seems better adapted to private restrictions covering a single small subdivision than to a general zoning scheme. Any considerable suburban development requires in addition to single family detached house sections, locations where one or two family houses, either detached or in rows, may be built, and a few limited locations where apartment houses may be built. Those whose needs or convenience demand an apartment should not be compelled to live in the congested sections of the city in order to secure that advantage. A more important objection to this direct method of limitation is that of doubtful constitutionality. It will be difficult, unless the courts take a very liberal attitude, to show a reason under the police power for the prohibition of the multi-family dwelling as such and without regard to yards, courts, open spaces or distribution of population.

2. Limitation of the percentage of lot that may be covered and regulation of the size of vards and courts. This is the method applied under the New York Building Zone Plan to protect high class single family detached house sections. In the "E" area districts residences are limited in general to an occupancy of 30 per cent of the area of the lot and a side vard and large rear vard are required. Multifamily houses are not prohibited, but the type of apartment house heretofore prevalent has been made impossible. The apartment house if built must contribute some considerable share to the open spaces of the section and may not as heretofore steal its light and air from neighboring property. The "E" zone regulation could probably be made still more effective and more suited to general application in securing a proper distribution of population, by directly basing the yard and court provisions on the number of families housed. It is reasonable that side vard and rear vard requirements should be greater for two families than for one family and

greater for four families than for two families. In the New York "E" district the side yard must be  $2\frac{1}{2}$  inches in least dimension for one foot of height of the building. Taking this as a proper standard for a one family house, it would be fair to say that this standard should be increased to 5 inches per foot in the case of a two family house and to  $7\frac{1}{2}$  inches in the case of a four family house and so on. This scale could be worked out in such a way that in a section where a private house on a 50 foot lot was the normal type, any apartment house constructed would have to provide a lot approximately as many times the size of a standard 50 foot lot as it had apartments.

3. Limitation of the number of houses or families per acre. In England, under the Town Planning Act, the number of houses or buildings per acre may be limited. Though houses or buildings rather than families are referred to, the act is apparently being so administered as substantially to secure the limitation of the number of families per acre. Though existing statutes in this country authorizing zoning have apparently not been drawn with a view to the limitation of the number of families per acre, it is possible that they might be construed to permit that method of zoning.

4. Requirement of a certain minimum land area for each family housed. This method is intended to accomplish the same result, and is in reality merely another way of stating the method just considered, i. e., limiting the number of families per acre. It would require a certain minimum area of lot for each dwelling or for each apartment in case of a multi-family dwelling. Thus there might be a zone in which a minimum of 5,000 square feet of land area per family would be required. This would mean the equivalent of a lot 50 feet by 100 feet for each family housed. Another zone might require 2500 square feet of land area per family; another 1250 square feet; another 625 square feet and another 312 square feet. This would mean that taking a standard lot 50 feet by 100 feet, in the first zone only a single family house could be constructed on such lot; in the second

zone a two family house could be constructed; in the third zone a four family house; in the fourth zone an eight family house; and in the fifth zone a sixteen family house. This would provide for the varying intensities of use necessary in a city of the metropolitan class. It would afford the means of protecting the suburban residence sections, of securing an appropriate distribution of population and of preventing undue congestion in the central area.

I believe that this plan of requiring a minimum land area per family can be carried out under those statutes that have been passed authorizing zoning in the various states that have followed the general terms of the New York Charter Amendments of 1916. Future statutes, however, should include this power specifically, so there will be no doubt as to the Legislative intent. Any residence zone plan that is based directly and consistently on the prevention of congestion of population is based on a purpose which the courts can scarcely fail to recognize as being within the plain scope of the police power.

This latter plan appears to me to present a number of advantages and I hope it will arouse some critical discussion at this session.

### DISCUSSION

## A. W. CRAWFORD, Philadelphia:

Mr. Whitten has suggested that the fourth method for the zoning of residences, namely the requirement of a certain minimum land area for each family housed, presents a number of advantages; and he asks particularly for critical discussion on this method. He says:

"Thus there might be a zone in which a minimum of 5,000 square feet per family would be required. This would mean the equivalent of a lot 50 x 100 feet for each family housed. Another zone might require 2500 square feet of lot area per family, another 1250 square feet," and so forth.

This would mean taking a standard lot 50 x 100 for a single house in the first zone, in the second zone a two-

family house, and in the third zone a three-family house, and so on.

I should like to discuss the constitutionality of this method. The judges of our highest courts have about 400 cases a year covering all kinds of considerations and with their very limited amount of time, their decision is bound to depend. to a great extent, upon the way the proposition strikes them. Their decision will depend upon their first impression. My fear is that the judge will say: "Why should a man who lives at the corner of A and 14th Street require for his family 5000 square feet, while the man who lives at the corner of B and 16th Street wants only 1250 square feet? We can, of course, show the effect upon the community's health by such zoning, and make that the justification for our distinction, but I am afraid that we would have difficulty in removing the first impression that the court got. Mr. Whitten's second method, that of limiting the percentage of lots that may be covered, the courts are already used to, and I personally believe it is better to follow the line of least resistance.

### MR. WHITTEN:

Mr. Crawford has brought out a very important point in connection with these various methods. In spite of the fact that the courts look with favor on regulating the size of yards and courts, and the portion of the lot that may be covered by building, I think it will not take very long before the courts see that there is the same relation and the same general purpose in the method of requiring a certain minimum area for each family. As a matter of fact the courts have not yet passed on zoning for the purpose of regulating the size of yards and courts, and they might say in such a case, following Mr. Crawford's suggestion: "Why should a building at the corner of A and 14th Street have a yard that is 25 feet wide, while a building in some other part of the city has a yard only half as wide?" It appears to me that the logic of the requirement of a certain minimum area for each

family is unanswerable; that it is a definite and consistent method for regulating the distribution of population, and what can come more clearly within the police power than the prevention of congestion of population, and the securing of the more even distribution of population throughout the city.

# LAWSON PURDY, New York City:

The courts must be educated. It is not many years ago that there were few men in this room that could make any sort of argument to sustain zoning on any principle. Now all of us think we can make conclusive arguments to sustain some forms of zoning at least. The more I have thought of the way that we should proceed to get the courts to see what we wish them to see, the more convinced I am that we should all of us think in terms of value a great deal, popularize the idea of preserving the value of a man's house, of a man's lot. Get that talked about. When you meet one of these judges tell him about it, so that when, bye-and-bye, a case comes before him as a judge, it will be entirely familiar to him.

Unhappily, we lost a case in Minnesota for several reasons, one of which was rather a good one. A case arose on the maintenance of a retail store in a residential section. The store was there before the ordinance that prohibited it was passed. The ordinance was retroactive. So far as we know, the city's case was not very effectively presented. In spite of that, I think the majority of the highest court of Minnesota held that the ordinance was unconstitutional in that it prohibited the erection of a retail store in a residential zone. Two judges dissented out of five, and one of them wrote a dissenting opinion—a very good opinion. He said when a man builds a house on a restricted street, restricted against business, he does it for the protection of the health and morals and character of his children, and on such a street, land has a higher value than on a street not so protected, other things being equal, because that protection is

worth money. The value of the house may be practically destroyed by the erection of stores on such a residential street because the desired atmosphere for the rearing of the family is gone, and the man is just as much entitled to be protected in the value of his house and land against the intrusion of his neighbors and the erection of stores, as he is to the protection of the police to prevent burglars breaking through and stealing from him. I think we should popularize that idea, so that the courts will be ready to follow the good example of that judge in Minnesota.

## EDWARD M. BASSETT, New York City:

I want to say a word or two on the subject of residential zoning, because Mr. Whitten, Mr. Swan and I have been into that intimately in New York City. Some Buffalo people asked me whether they should not make their chief argument the protection of Delaware Avenue and Linwood Avenue (they are very handsome residential streets), and show how they can be preserved against apartment houses and business places, and thereby get the leading people of the city in favor of it. I said to the gentlemen, "Don't go at it that way. Forget Delaware Avenue and Linwood Avenue and speak of the little streets where the working people and the clerks and everybody live, and if you get them interested in residential zoning they will help you all the way up, because the other streets will see the subject for themselves." In New York a few weeks ago people thought that resignations demanded from the Board of Appeals by the new mayor meant the overthrow of the law. Resolutions of tax payers associations poured in by letters from all sorts of out-of-theway places—the little property owner that didn't want a garage next door, the man near the corner that didn't want a grocery store on it—they heard from all the little places. Nothing could show better that the zoning plan was largely favored because the belief in its benefits was wide-spread, and not because it had been anchored on a few important places. In our E districts, as we called them—they are the Class I

residential districts of St. Louis—many vacant plots which were formerly worth \$5,000 are now worth \$6,000 and \$7,000. Some that were held out of building until the private restrictions expired were planned for apartment houses, to exploit the neighboring detached house localities, but since the E district zoning has gone into effect private detached residences have been built. People have put up private garages, sun parlors, and in every way put their houses in order. There is a brighter, more finished and permanent look to the E residential districts in Greater New York than ever was before, and people are not now going out of Greater New York to find a home that they can keep for one or two generations the way they did before the residential zoning went into effect.

## K. K. Hooper, Dallas, Texas:

I am from a city of about 150,000 people. We have a local ordinance which prohibits the erection of business buildings beyond the property line in the residence section. It requires that a majority of the property owners within 300 feet of the lot on which it is proposed to build a business structure beyond the property line already established shall give their permission. Some time ago a case arose where property owners refused permission, and backers of the proposed business building carried the case to court. The protest against it was along the line that Mr. Purdy suggested, that is, the distribution of land values. So far the protest has been upheld in the lower court and in the appellate court. We hope that it will be taken to our State Supreme Court, because we think it will also be upheld there.

# W. J. DONALD, Niagara Falls:

An organization which reports on the problem of the stabilization of labor recommended the building of houses in Niagara Falls according to different races, houses for the foreign-born, houses for the native-born. I'd like to know the status

of that problem, whether it is right or wrong, and with what arguments to meet it if it is wrong.

#### MR. BASSETT:

I can say that there has been a court decision on that, upheld in the United States Supreme Court. The case originated in Nashville, Tennessee, where there was an effort to zone for white people and colored people. It was held to be unconstitutional, and zoning by races is probably finally decided in that way.

## Louis Lott, Dayton, Ohio:

We have greatly criticised the foreign-born immigrant in our country and upbraided him especially during the beginning of the war for his lack of enthusiasm and co-operation with Americans. I think there is nothing more against making him a good American citizen than by segregating him in that manner. I think we should bring him into the family of Americans that is in the neighborhood and teach him American ways, and thoughts, and by doing that the more we can advance him in American ideals.

#### MR. OLMSTED:

Is Mr. Donald's question related to the legal and constitutional question, or to the question of policy?

I understood it was with regard to the building or designing of certain buildings for occupants having certain tastes and certain desires and certain limitations which are more or less coincident with their nationality. That, as a question of policy, was in part answered by Mr. Lott, but in any housing developments which are to succeed, one must, of course, consider the requirements and the habits of the people for whom the houses are being built, and where there are requirements in regard to number of rooms, etc., which are more or less coincident with racial divisions, they have to be taken into account, and if those differences are very large,

it is a question how far one can intermingle houses for people who do not readily intermingle with each other and get away with the thing commercially. It is desirable, as Mr. Lott said, not to put artificial barriers in the way of the assimilation of foreign-born, but if you try to force the mingling of people who are not yet ready to mingle and don't want to mingle, house to house, along the same street, some one has to carry a pretty heavy economic burden, because you have a lot of houses in there that nobody wants to rent at the prices for which they were built to rent.

#### MR. GOODRICH:

I can give an experience that came into my observation not long ago. A certain manufacturer had erected some very fine concrete houses for the use of his Hungarian tenants, but they were empty, and the question was, why? The women usually went about barefooted and the floors were too cold. The children fell down and hurt themselves worse on a concrete floor than on a wooden floor. The dishes that were dropped were more apt to break on a concrete floor than on a wooden floor.

### MR. OLMSTED:

I find myself in doubt as to the special advantages of Dr. Whitten's fourth method, that is requiring a certain minimum area per family; or his third method, regulating the number of families per acre. With all the light I have up to the present time, the method of zoning by height and area limitations, seems not only more likely to be held constitutional by the courts, but it seems also a simpler and more straightforward way of dealing with the problem of providing light and air in adequate quantities, well distributed, to buildings for human habitation, whether occupied by individuals as in a hotel, or by a single family, or by several families.

## MR. WHITTEN:

I can't agree with Mr. Olmsted that regulation of the size of courts and yards and the area of buildings is a very

simple method. I think, perhaps, it is the most complicated method in its detailed application of any of the methods that have been suggested; that is, the detailed regulation of yards and courts and the attempt by that means to secure the erection in particular parts of the city of a particular type of house, and to prevent the erection of all other types of houses that might be antagonistic, lead to a considerable amount of detail and make the application of the regulation rather drastic in a good many ways. Of course, it can be applied quite definitely to the single-family detached house section.

But I think that as a general method of planning for the distribution of population, of permitting a more intensive use of the land near congested sections and providing for a less and less intensive use of the land as you go out, the regulation by a certain minimum space per family is the simplest and most consistent with the purpose of preventing undue congestion of population. I am not claiming that this method which has been in use in New England and Canada, is the one that should necessarily be applied here, but I am sure it has advantages which warrant its careful consideration.

## INDUSTRIAL ZONING IN PRACTICE

### HERBERT S. SWAN

Executive Secretary, Zoning Committee, New York City

There seems to be a more or less general impression that zoning in so far as it affects business and industry is negative—that it is merely a means of keeping business and industry out of residential sections. So pronounced is this view that the very word zoning has commonly come to mean "protection" for dwelling houses, and "restriction" for stores and factories. This situation is most unfortunate for zoning when rightly understood can be made something as positive and helpful for business buildings as for non-business buildings.

That the relative competitive strength of a city in the domestic and foreign markets of the world is frequently conditioned to quite as great an extent by the arrangement of the industries within the city as by the availability of raw materials and the proximity of a consuming public is just beginning to dawn upon us. Economical means of transferring and distributing freight within a city contribute proportionately no less to the development and expansion of its commercial and industrial hinterland than efficient outside connections by rail and water. Heavy terminal costs are as much a drag upon a city's prosperity as high freight charges. Every cent saved in needless trucking means just that much more money available for the extension of the city's commercial and industrial radius by rail or water.

When factories and warehouses are not located with reference to freight terminals, a situation frequently develops

where the downtown streets are unnecessarily congested to the inconvenience and financial loss of the whole city. A similar condition results where mutually interdependent industries locate in widely-separated parts of the city instead of near one another. It is maladjustments of this kind that zoning is designed to remedy.

If experts on transportation are correct in telling us that the movement of freight increases as the fourth power of the population, that the freight traffic doubles every time the population increases twenty per cent—then, the street congestion experienced by our large cities of today is as nothing compared with what our larger cities of tomorrow will be obliged to endure. They will be compelled to adopt every possible means in order to keep traffic moving or choke under their own growth.

The purpose of this paper is, however, not to analyze the various evils from which our cities are suffering. That is the function of the economic and industrial survey. The object of this paper is rather to consider the detailed method of formulating the zoning ordinance and of laying out the several business and factory districts than to dwell upon the necessity for zoning.

The simplicity or complexity of its classification will affect as no other factor the continued success of a plan, for after all, zoning is almost entirely a matter of classification. If the classification is vague, ambiguous or needlessly involved, it is apt to prejudice the operation of the whole plan.

These facts do not seem to be generally appreciated. Some cities appear to think that the prime requisite in a good zoning scheme is elasticity. A certain amount of elasticity is, of course, wanted, but not at the expense of simplicity. The Minneapolis and Berkeley ordinances are both illustrations of instances where extreme consideration has been paid to

<sup>(1)</sup> It is a question whether it is not best to establish an administrative board to moderate and ameliorate the rigor of the law in exceptional cases as is done in New York by the Board of Appeals, than to make the classification itself elastic. No matter what care is taken in framing the ordinance, instances will be found where the application of the strict letter of the law will work unnecessary hardship.

elasticity. The Minneapolis ordinance subdivides trades and industries into sixteen different classes: the Berkeley ordinance into twenty different classes. Taken in all their possible combinations the building classes of the Minneapolis ordinance would permit of 241 separate and distinct kinds of industrial use districts. The Berkeley ordinance would permit of 381 separate and distinct kinds of use districts. Such elasticity is bound to develop into a situation where ultimately each district will be just a little different from every other district with the consequence that nobody will know what is allowed or disallowed in any district.

It may be urged that it is very unlikely that all of these combinations will ever be taken advantage of. This may be true, but their very possibility will lead to the development of unnecessary complications.1 That such minute refinements in the classification are bound to prove irksome, if not unworkable in practice, is evidenced by the fact that Berkeley after less than two years' experience under its zoning ordinance is now contemplating its radical amendment by reducing the classes of industrial use districts to a maximum of five.

The classification is the substance of every district—the district merely bounds the classification. Once accepted. therefore, a classification almost must be continued as any vital modification in its provisions would practically necessitate a general rearrangement of the districts.

Although a zoning ordinance should have a simple classification, it should not sacrifice needed protection for simplicity. This seems to be the main characteristic of the Almeda and Los Angeles ordinances. These ordinances provide only two classes of districts. In the residence districts, the businesses not especially excluded are permitted; in the industrial districts all kinds of business and industry are unrestrained. Neither of these ordinances protects resi-

<sup>(1)</sup> The experience of Minneapolis illustrates this point. The establishment of the first twenty industrial districts there resulted in twelve different kinds of districts. Only three of these combinations were duplicated; two, three times; and one, five times.

dence streets from stores, nor business streets from large factories or nuisance uses.

The New York resolution in establishing three classes of districts supplies both of these omissions.¹ The residential districts exclude all kinds of business and industry; the business districts, all kinds of large manufacturing establishments and nuisances. But the New York classifications is weak in one respect—it does not afford sufficient protection to manufacturing. If a factory requires more than 25% of the floor area in a building, or a floor area in excess of the lot area, whichever is the greater, it is forced into the unrestricted district containing all kinds of nuisances.

To put manufacturing establishments and nuisance uses into the same classification thus is apt to produce many unhappy compromises as every unrestricted district will be the result more or less of a balance struck, on the one hand, between the just claims of the district for factory development and, on the other hand, the protection demanded by neighboring residence and business districts against nuisances. In some cases nuisances will be allowed where they will do great harm for no better reason than that the locality is naturally a manufacturing district; in other cases, factories will be prohibited on the ground not that their admission is undesirable, but because the nuisances that might slip into the district with them would prove a serious menace to adjoining districts. The proposed Philadelphia and St. Louis ordinances in creating four classes of districts-residence, business, manufacturing and nuisance—are in this respect a distinct improvement over the New York resolution.

A special feature of the Berkeley ordinance, and of the proposed Fresno ordinance, is the exclusion of residences from the heavy manufacturing districts and the nuisance districts. This plan has many distinct merits. The very reasons that make it desirable to exclude factories and nuisances from

<sup>(1)</sup> For an account of the experience under the New York resolution up to January 1, 1918, see article by present writer on "How Zoning Works in New York," National Municipal Review, May, 1918.

residence districts apply with equal, if not greater, force when it comes to prohibiting the erection of new dwellings in districts set aside for industrial development. If it is unhealthful for people to live near a factory isolated in the residence district, it is all the more unhealthful for them to live in a home isolated in the industrial district. To permit residence buildings in factory districts, moreover, tends to increase the size of these districts beyond their natural requirements as the area included in this classification must also make provision for the erection of a considerable number of dwellings.

Mixed buildings furnish the real reason for zoning. The success of zoning is to be judged to a very great degree by the completeness with which it segregates different kinds of buildings. This segregation cannot, of course, be perfected unless exclusion is applied to one class of buildings as well as to another. But in considering the present advisability of excluding residences from industrial and nuisance districts, it may be well to recall that much which is even rudimentary in zoning has not as yet been sustained as constitutional by the courts. Until such vital parts of the zoning program as the exclusion of stores from residence streets have been favorably passed upon by the courts, the most deliberate caution should be exercised in extending the scope of the regulations.

How many classes of industrial districts is a question which cannot be settled by the application of theoretical principles. It must be decided after a careful examination of the facts in each case. The deciding factors will, however most generally be: (1) the heterogeneity of the existing and prospective development; and (2) the degree to which different types of development have interpenetrated one another. A small homogeneous community may find it necessary to establish but one industrial district, an unrestricted district embracing all kinds of business and industry. More complex communities may, on the other hand, demand two, three, four or more classes of industrial districts. The

number should, however, in every case be kept down to the smallest working minimum essential to the performance of the primary objects of the plan.

With a simple classification, no worthy object will be served by keeping down the number of districts. A multiplicity of districts is not something in itself to be discouraged provided the districts are well-selected. Indeed, several small districts may prove preferable to one large one as they can be made to conform more nearly to the existing or immediately prospective development as well as to promote a more uniform type of development. Industrial districts larger than the area demanded by the least restricted class of buildings in the district are apt to result in a very mixed development. The buildings belonging to the more restricted class would perhaps in most instances be better served if segregated by themselves. It is an open question, therefore, whether the general policy in drawing the district boundary lines should not be to limit the extent of the less restrictive classification, each in its turn, to the smallest practicable area.

The form which factory districts, as distinguished from business districts, should assume—whether they should be confined in the heart of the city, dispersed to the suburbs, segregated in concentric zones, laid out along lines radiating from the center, arranged in parallel districts bisecting the city, or discriminately scattered throughout-is one which has as yet not been satisfactorily answered. If one of these methods of distributing factories is more satisfactory than another, the fact has not been conclusively demonstrated. Such industrial surveys as are available do not enable one to say which type or types of districts produce the best results. It may well be that there is no most satisfactory method, that the most satisfactory method varies for different trades and industries and under different conditions, and that the most satisfactory method in one community is the least satisfactory method in another community.

Industrial zoning as applied to factories has often been advocated with a view to effecting a decentralization of population, it being supposed that a judicious distribution of factories would at the same time prevent a piling up of the workers in congested tenements. If manufacturing were to be accommodated in the purlieus of the city-and this to a certain extent can be realized for only those industries which are engaged in manufacture for the local market need be near the business center—each establishment would no doubt in time become the center about which an increasing number of its operatives would seek to live1 but this would not in itself solve the problem of land overcrowding. Without drastic regulations effectively limiting the number of families that could be housed per acre, it might only serve to create new congested centers, worse than the old, in the outskirts of the city.2 The way to limit congestion of population is to limit it and this, it seems increasingly clear, can only be done by prohibiting more than a given number of families from inhabiting a certain unit of ground.

To scatter the factories for no better reason than that many factories assembled at one place will require a large number of employees is to ignore some of the fundamental facts in the case, as a decentralization of a city's industrial development does not necessarily mean a zoning of workers by place of work. In the first place the different members of a workman's family work in different places. If the head of the family lives where he can walk to his work, will not his daughter who clerks in a department store, or his son who keeps books in a downtown office have to ride? In the second place, small industrial areas can be used intensively, espe-

<sup>(</sup>¹) Different surveys show that the proportion of employes living within walking distance of their work increases with the length of time that the industry has been established in one place. See Report on Detroit Street Railway Traffic and Proposed Subway, 1915, p. 7. Also Report of Chicago Traction and Subway Commission, 1916, p. 246.

<sup>(2)</sup> For a description of how far congestion can proceed, see report prepared by present writer on "Land Overcrowding n Brooklyn," 1916, Tenement House Committee, Brooklyn Bureau of Charities.

cially when occupied by light manufacturing. In New York there are blocks improved with loft buildings, accommodating more than 5,000 operatives.

Is not the answer to the dilemma that intensive industrial development is no excuse for a congestion of population, that a decentralization of population can go hand in hand with a concentration of industry? Factory centers like business centers must have convenient transportation. If there are many workmen employed in one place, it is not essential to house them on the same area which a smaller number would inhabit more sparsely! Through the construction of transit lines the housing area can be enlarged to such an extent that each family will still live in good surroundings.

Action affecting changes in the districts or the classification should be taken only after a most deliberate examination of the facts. After a section has once been subject to certain restrictions a change in the regulations cannot be made without due regard to the effect that the ordinance has had upon the development of the locality. In time it will, of course, become increasingly more and more difficult to make changes of this character without violating the interests which have come into being on account of the plan. Here is a district where certain buildings have been erected which, but for the protection afforded by the regulations, would never have been constructed: there is a district where certain buildings have been prevented from being erected which, but for the restrictions imposed by the ordinance, would have been built. A change in the restrictions will leave neither of these districts in the position which they would have occupied but for the adoption of the law.

The shape, size, location and distribution of industrial districts, as well as their classification, must be determined, not by theory, but by a careful consideration of the concrete facts in each case. The presence of rail and water terminals, the size of the block and lot unit, the width and grade of streets, the character of the existing development, in fact, practically everything connected with the physical plan of

a city have to be taken into account and thoroughly studied and analyzed in framing a constructive program for industrial growth. That such a program for future development is essential in every city cannot be questioned. For years the pecuniary losses suffered on account of unregulated building in certain sections of New York have not only equalled, but exceeded those suffered from fire. Investigation might show that this state of facts was true of the metropolis as a whole. The city that does not protect its citizens against fire is generally considered derelict in its sense of public duty. The same is rapidly becoming true of the city that does not protect its citizens against unregulated building.

#### DISCUSSION

MR. BASSETT:

Industry permeates business districts. This is necessarily so. The great dry goods store must have its dressmaking or industrial department; a great jewelry store must have its jewel setting or industrial department; garment making goes on in the business districts of many cities; and so there is an intrusion of necessary industry in the carrying on of the business of a great city, and to say that it cannot take place in a business section is arbitrary and impossible. Now, how shall that be adjusted? In New York it was adjusted by saying that in business districts an area equal to the lot, or one-fourth of the floor space of the building, can be devoted to certain light industry not of a nuisance nature.

Another problem is how shall nuisance industries be separated from those harmless industries that do not gradually drive away the population and render a street quite impossible for business uses. In New York it was managed by having the unrestricted district the industrial district, but nuisance industries cannot go into the business district, even to the extent of one-fourth of the floor space; but nuisance industries can go anywhere in the unrestricted, or, as we sometimes call

it, the industrial district, because in New York we have only three districts, in a broad sense; the residential, the business and the industrial. Consequently, the subject of industrial zoning is not simply to say this is for industry, this is for business and that is for residence.

Then, too, there is the field of invasion of nuisance uses not exactly industrial uses, for instance, stables and garages. You might say they are businesses and not industries, and yet if classed according to the harm that they do in business and residential neighborhoods, they are among the nuisances, because every great city, on its high class business streets and residence streets of all sorts, is being injured perhaps more by garages than by any other single cause. In New York we have put garages in industrial or unrestricted districts, but, in order that there should be a certain ability to choose blocks of a business nature where they wouldn't hurt, it is provided that the Board of Appeals, which is the adjustment or adaptation board for this purpose in the city, can, where there is already one garage, or one stable, in a block, allow another in their discretion, thus giving a considerable latitude, but keeping them out of places where they ought not to be.

One of the most helpful provisions of the zoning law in New York City has turned out to be the restriction of garages, and four-fifths of all applications that are made to the Board of Appeals for adaptation under the zoning law since it went into effect have been cases of garages. We found that it was necessary to provide, too, for public family garages in apartment house localities. It came about because some residential localities were very large and garage locations distant. It was provided that even in residential districts a garage for more than five vehicles could be allowed where there was an 80% consent in an area outlined by the Board of Appeals, and that provision is now working very well indeed.

Mr. Swan suggests that instead of creating a multiplicity of kinds of industrial districts, cities should consider the plan which is working very adequately in New York City, and which can be carried further; namely that a Board of Appeals

capable of exercising discretion on border line cases, may bring about a better result than the stereotyped adherence to a multitude of industrial districts. It is plain that in a subject like zoning, where there must be a border line between nuisance and light manufacturing districts, where there must be a border line between industrial and business districts, those border lines are always troublesome and the law will be considered arbitrary if it is according to a mathematical line. It is one of the safeguards of a zoning plan, if it is capable of adjustment by a board along a prescribed rule and according to the spirit and intent of the law. just as the Pure Food Law of the United States would be quite arbitrary and incapable of fair administration if there was not a bureau that could use discretion in the administration of that law within certain confines which are pointed out in the law itself.

Mr. Swan thinks that St. Louis has improved in industrial zoning on the city of New York, in that the city of St. Louis has industrial districts and unrestricted districts, whereas in New York City we have the unrestricted districts, with the privilege of a certain amount of intrusion of industry in the business districts. I think I agree with Mr. Swan. It didn't seem best to create more districts in our first act in New York City, but it may be that as we watch the success of other cities we will find a way, too, to increase the number of kinds of districts. New York has an out-and-out statement of the kinds of industrial uses which are nuisance uses. They are put down by name and they are numbered, and in that way we are able to classify nuisance uses as exactly as is done in St. Louis: but, as Mr. Swan points out, there is an advantage in having light industry localities protected against the coming in of nuisance industries. If a building is to be entirely devoted, we will say, to stamping brass goods-a light industry-at present it has to go in the nonrestricted district, the same district that nuisances would go into. Mr. Swan rightly points out that this is not entirely logical; and that there should be a certain amount

of protection of light industries against nuisance industries. In St. Louis the nuisance industries must go into the unrestricted localities.

Mr. Swan adverts to the subject of excluding homes from industrial districts, as is done in a number of cities on the Pacific Coast. Frankly, that has not appealed to us in New York City as being very workable and we didn't try to do it. I think that we would have made a mistake if we had done it. In New York City in the unrestricted district you can put industries, nuisance or light, you can put business, or you can put homes. In the business district you can put business and one-fourth light industries and homes. In the residential district you can put homes, and those uses which comport with homes, like churches, schools, hospitals, clubs, and so on, but there is no effort to exclude the more highly restricted uses from industrial localities. In California, however, in several of the cities, homes are excluded from certain industrial districts, and Mr. Swan thinks there is much to be said for that, because people ought not to live and bring up their children among chemical factories, for instance. I fully agree with him. I presume it is a case where different cities must do differently, according to their circumstances.

Mr. Swan does not believe in placing residential districts near industrial localities; in other words, in interlarding residences next to industries. On that subject I myself am not so sure. I know many places in Europe where it is working admirably to have residential districts near industrial districts, especially near the localities of light industry. In the great Bush Terminal development in South Brooklyn—Mr. Bush's idea, and it is a successful idea, because he has worked it out successfully on an enormous scale—the first stratum is docks, the next stratum railroad tracks, the next stratum warehouses, the next stratum factories for light industries, and the next stratum residential.

One of the most perplexing features of industrial zoning in New York City is what to do with old industrial buildings.

There is hardly any business or residential locality in Greater New York that is not, to some extent, shot through with industrial buildings, and some of them are nuisance buildings. Under our plan they were not put out, because our plan is not retroactive, but if it were quite possible for a nuisance industry to perpetuate itself indefinitely in a building, freely changing that building from one nuisance industry to another nuisance industry, then we would always be embarrassed by these sporadic industrial buildings. We have endeavored in a general way to bring it about that when any change takes place in the industrial use of a building it shall be for the better. If a building has to be changed more than 50%, it has to go into a better class of use. in actual operation will be found to be extremely difficult. Mr. Swan is giving it, I think, the most intelligent and analytical attention, and he is assisting those various boards and departments that have to do with the administration of the law.

To sum up, industrial zoning is well-nigh the most important field of zoning in a great city. It is also the most difficult field to manage accurately.

# THE CHAIRMAN, MR. GOODRICH:

Before leaving New York I had planned to discuss this paper at some length, and I am going to take the privilege of doing so from the platform, if you will permit, before calling on others to talk on this very interesting subject. In making an industrial survey of Detroit a year ago it was discovered that jewelry manufacturers, carburettor makers and other manufacturers of things which used almost no tonnage had pre-empted the space along the railroads (which is very restricted in Detroit around the belt line), to the exclusion of those industries which demanded larger areas and more facilities from the railroads. This condition existed to such an extent that the railroads either had to condemn

property on both sides through large industries, so as to get extra trackage for those manufacturers who demanded many cars per day in and out, or else these large factories had to move bodily elsewhere in the community. Either one of those two alternatives would be excessively costly. In one case there would be a burden on the railroads and the community at large in securing extra space; in the other case, with the large factories moved away, there would be a blighted zone left. That was actually starting in Detroit. We tried to prevent its continuation and suggested that the lighter manufacturing establishments be moved out, so as to make room for the expansion of the larger ones. A manufacturing jeweler did not need trackage. He should never have been established on a railroad. His commodities are always handled by express, or easily in one ton lots through the regular terminals, when they happen to come in by These carburetor manufacturers and other accessories of automobiles have small tonnage per day, in comparison with larger manufacturers, and these classes should be put in a different zone away from the railroads. They should be required, by some means, to carry their material in and out from regularly established freight terminals, or else a final alternative along that line should be adopted—enforce the adoption of the industrial terminal such as Mr. Bush has so successfully exploited in South Brooklyn. In such a terminal there is a piling, one above another, of small industries, just as houses are piled one upon another in an apartment. Such an industrial establishment. can be located directly on trackage, because it will then, in proportion to its land area get just as many cars in and out per day as would a larger factory.

In connection with several other industrial surveys besides the one in Detroit, I came to the opinion that it would be perfectly proper and within the police authority to zone entirely out of certain communities the worst of the nuisance class, the factories to remove being such as chemical works, particularly fertilizers and things of that

kind. They are such a tremendous nuisance they might as well be eliminated at the very start.

Again, there is no reason from a transportation point of view why those manufacturers which simply manufacture in transit (like milling grain in transit) could not just as well be located outside of a large community as inside of it. Flour mills—grist mills in general, are nuisances in many ways. In addition to the nuisance factory, there is the one which might be moved so as to preserve for the use of the community its transportation facilities, and not allow them to be pre-empted by the things which could just as well be located elsewhere.

The question of grouping light manufacturers with workmen's homes seems to me to be of more than normal interest, even though one person only in the family is able to work in the immediate vicinity of the home. In the case of the five-member family cited by Mr. Bassett, if it were possible for one member to work within a block or two of the home, a reduction in traffic troubles of 20% would be immediately secured. It would therefore seem that in New York, for example, in Manhattan especially it might be possible, and very advantageously so, to regroup certain parts of the city which are now purely tenement, and establish factories like artificial flower manufacturies, or some of the clothing establishments, at the corners of blocks, permitting the rest of the block to be re-designed into modern tenements, with central open spaces. Thus you would have a little group which would be more or less self-supporting. Why isn't that a normal condition for a great city, as well as for a rural district which is just starting in the industrial field? It seems to me, therefore, that there should be at least two industrial zones, one which might be called the unrestricted, except for specially named major nuisances-for those industries which might just as well be transplanted entirely out of the community restricted especially for those which are of a minor nuisance variety, those which demand large tonnage and need rail-

road connection; the second zone to be for the light manufactury, perhaps restricted by name, perhaps promoted by the construction of industrial terminals, so-called; that is, concentrated small tenant factories where the tonnage is of such a total amount as to make it comparable with the larger factories, and in connection with which proper switching facilities can be secured. I, therefore, leave that with you who are making zoning plans for other cities to study the question of two zones, one a semi-unrestricted, and another restricted to certain special kinds of products, in connection with which there will be special opportunities for housing.

# MR. LOTT, Dayton, Ohio:

The zoning ordinance in Detroit has not been passed at all; it is simply under discussion at the present time. The fact is certain plants are replanting themselves, moving to the westward.

## MR. WHITTEN, Cleveland, Ohio:

I'd like to ask Mr. Goodrich on what basis you would justify the exclusion of light manufacturing from the heavy manufacturing district.

### Mr. Goodrich:

It is the greater good to the greater number. For instance, there is a burden on real estate which I think should be made more prominent, just as Mr. Purdy suggested has been the case heretofore. It seems to me the same thing applies to industrial zoning as to residence zoning. Certain values exist to-day. If we started to zone so as to confiscate them, the courts would not sustain us. It is a matter of going as far as we can with each classification of real estate and making the best possible use of it; perhaps, carving down, where possible, but in general conserving values. There are the health, light and air features and there is the conservation value we must watch, because it is unconstitutional to take from a man what belongs to him. It is a

question of reasonableness in every case, how far you can go toward exacting different uses from land. We are going just as far as we think the interpretation of the present police power will let us.

#### MR. WHITTEN:

I do not see how it conserves values to prohibit the light manufacturing in a heavy manufacturing zone.

### Mr. Goodrich:

If a heavy manufacturer needs to expand, or the railroad needs to expand to meet the growth of the community, and the light manufacturer, who does not make use of the railroads is established, he is preventing the growth of the community—what ought to be the normal growth of the community—and he can be more easily moved out than the railroad can be moved, or the large manufacturer. It is going back to the greater good of the greater number.

#### A MEMBER:

I think your scheme is absolutely unsound from top to bottom. The thing it absolutely ignores is the human factor. You cannot get workmen to live in one block and work in that block this week, next week, next year, and as long as they stay in that house. They want to feel at home in their community and they never will feel, as far as I see, bound to work in any one factory, or even in any one group of factories. In Milwaukee, a few years ago, they told me half the people lived in the suburban community of West Allis and worked in Milwaukee, 3 or 4 miles away. I don't think the workmen are going to stand for having a scheme that is to induce them to work in one factory, or one group of factories, in one section of the city, for any length of time.

# Mr. Goodrich:

Perhaps I can give a direct suggestion in rebuttal. I had occasion, a year or so ago, to discuss with a certain manu-

facturer the re-location of his plant. It was in Brooklyn. He was making especially high-grade stuff of some kind. ladies' waists or millinery. He had been employing a certain class of German girls. They had been pushed out by the Jewish invasion and this German colony had re-established itself in another part of Brooklyn. He absolutely had to go to his working people. He wanted to put his factory there where those people could come to him, and they wanted to come to him, but wouldn't come to him where he was located. Most of the people who live on the East Side in Manhattan work within walking distance across Manhattan. That is what creates the terrific congestion on 14th Street to-day. There is another case where I believe that at least one out of a family of five would work a shorter distance from home if there was opportunity to do so. Those are two cases of very late occurrence. In Detroit it is wellknown that some of Ford's employes have to ride three hours a day to get back and forth. Many of them walk almost as long, and it is impossible in that particular instance to provide transportation. It is much easier to provide houses adjacent to a large plant, in which case they actually would be used, because the housing demand in the vicinity of Ford's and some of the other plants is far above the normal of the community. People usually do stay within bounds. They may like to move about within a district, but they will not go outside the 5-cent zone if they can help it, and will not go outside of walking distance if they can help that. Therefore, it seems to me that you are fundamentally right when you try to locate things so that people can walk between where they live and work.

## NATHANIEL GREEN, Milwaukee:

In Milwaukee a great many industries are located in what we term residence districts, the idea being to get the industry where the people can get at it. That is especially true of industries requiring girls. They can get to their factory and back home for lunch without any street car fare. In

these districts there is absolutely no objection to a first-class factory producing lighter goods—shoes, clothing, knitted goods for instance—locating on the corners. Many of them are being established every day. Regarding the statement with reference to West Allis, the gentleman is correct, that many people living in West Allis work in Milwaukee, and also a great many more living in Milwaukee go to West Allis. That is due to the fact that West Allis hasn't grown in residences in proportion to the vast increase in its manufactures, and consequently a great deal of its labor must come from Milwaukee. I think, however, there are relatively few people living in West Allis that work in Milwaukee.

#### MR. CRAWFORD:

It seems to me that you cannot attempt to make the thing too iron-bound. I think that is what we are attempting to make it. You can't say to a man, "You are going to work here all the time, you won't work across the town next year." You simply have to establish certain things that will tend in that direction. I was in Detroit the other day and I went out to Burnham, and on the way out I sat next to a workman who had been working from 11.00 o'clock that night to 7.00. I sat next to him an hour and a quarter before he got out. I said, "Why do you live away out here?" He said, "I have nine children and this is a clean town, without foreigners, and that is the reason I spend an hour and a quarter every day going back and forth." That is a perfectly complete answer. Therefore, it is desirable to establish the residences for workmen within walking distance because it helps to reduce the transportation problem. On the other hand, it is unquestionably true that you should establish outlying industries with communities around them that will furnish the necessary workmen. We have all known that ten vears ago it was almost impossible to get a workman to go out to the suburbs, but the movie has been a great help to

that. If you establish a manufactory and establish a movie, and he gets to the city two or three times, a workman is satisfied.

The chairman's suggestion that you could exclude light manufacturing from the heavy manufacturing zone because by so doing you would preserve values would probably not pass the court's test if objected to on the ground of unconstitutionality. Assuming there might be a slight increase of values by such a requirement, the courts would say that there was a question, sometimes it might increase values and sometimes it might not.

We are in danger as city planners of getting a narrow point of view. In all this discussion we have talked only of zoning regulations and not of some of the other things in city planning that help zoning. I am reminded of what we have done recently in park improvement in Philadelphia, which I think is about as effective zoning as we can do. You have all heard of the Midvale Works, employing about 20,000 people with a population of 100,000 dependent upon that working population. That industry is located in a valley which runs along the Philadelphia & Reading R. R. at the southwest end of Germantown, a very beautiful residential section. Right next to the location of the works was an old estate of about 60 acres called McCane Court. The family gave about 10 acres and we bought some more, so that now the physical situation is that you have the railroad with the Midvale plant alongside of it and a residential section for the workers at the plant near at hand. Then comes a park barrier with a width of from 1000 to 1400 feet, and then the older residential section of Germantown. I mention this merely to show the part that parks may play in the zoning of a city.

## E. T. Paterson, Detroit:

There is one point that I think has not been taken into consideration in the attempt to distinguish between zoning for light manufacturing and heavy manufacturing. In Detroit, for instance, I can go back a number of years and re-

call that some of the big fellows today were once much smaller than some of the little fellows which Mr. Goodrich puts in the light manufacturing class. The little fellow of today is likely to be the big fellow needing acres and acres of space ten years from now, so that I do not think it is practical at all to consider making a zone for the light manufacturer and another zone for the heavy manufacturer. It seems to me it is entirely a matter of competition and elimination and survival of the fittest.

#### Mr. Goodrich:

Why can't you have an industrial terminal, where the little man is to be established, and as he grows he takes more and more space of such terminal, and finally expands out of it entirely to a condition where he is restricted to three acres, say. That is what is happening at the Bush terminal, in Patterson, New Jersey, Albany, and scores of other places. The terminal is an industrial incubator, in which a small man establishes himself, and which is available for his growth, and when he grows out of that he grows into a big establishment, where he gets a railroad connection and occupies a large area.

# MR. WHITTEN:

Don't you think the normal development of an industrial district is for large industries to locate in the center of the town first when it is small and then, as the town grows, to expand into the suburban sections, and those sections near the center of the town to become sections for light manufacturing? I think there is no need of restricting the sections in the center of the town to any one form of manufacturing, the economic process is for the heavy manufacturer to be eliminated in time and go to the suburbs.

## MR. GOODRICH:

It seems to me there are two kinds of industries, those in which the natural economic tendency is to locate on a rail-

road, because of the tonnage involved, and for which the workers have to come from distant places, wherever they can. The other class is one which locates naturally in the center of population, close to its workers and which can go to the railroad for its tonnage. Those seem to be natural groupings. There are two distinct classes. There is the foundry on the railroad, there is the artificial flower manufacturer in the center of the community. Those are extremes. I would exclude one group from the other invariably. I would endeavor to make that differentiation. It may not be possible, under the present interpretation of the police power, but it seems to me to permit people to work along the railroads, with dirt and soot, is detrimental to health to a certain extent, and conversely it is detrimental to permit foundries, machine shops and other nuisance industries to be located in the center of a community, where, on the other hand, it seems unreasonable to prevent the location of shoe manufacturers, or of clothing, high-grade millinery, flowers, and various kinds of jewelry. The reasonableness of those two sides seems obvious. It is where you get to the border line that the thing is difficult.

### MR. PATERSON:

I don't think you have a chance in the world to impose any such restrictions as that upon industry. In the first place, the smaller the community the more they want them. With very few exceptions, that is the life-blood of the city, and when you get to imposing restrictions you are striking a very sensitive proposition. I can see a manufacturer thinking of locating a new industry, of moving to a new city, or building a new plant. He looks all over the ground and finds a place that seems suitable for his purpose. It has the right amount of area, it is convenient for shipping, the labor market is within a reasonable distance, either living there or through transportation, and he thinks that will suit him all right. "It is on a railroad track, but I don't need the railroad; perhaps some day I

can use it." Another fellow comes along and says, "You can't use that place, because you don't need a railroad."

### MR. GOODRICH:

I think that if the community allows him to establish himself where he sees fit, some day both will repent it. That is my answer to your suggestion. Of course there are cases where there is anxiety to get something at any cost, and they abandon consideration of the future condition of affairs. It seems to me, however, that city planning is looking forward into the future and is imposing things to-day which will apply in the future and should condition matters somewhat as I have suggested.

## E. H. BENNETT, Chicago:

All of the discussion emphasizes the fact that we cannot consider zoning in itself. We must consider it in relation to the entire city plan and to the city of the future, when it is two or three times as big as it is to-day. The situation in cities where the topography is well marked is very simple compared to those like Chicago which I am sorry to cite as one of the worst instances of the evil of mixed zones. It once occurred to me to draw what I called a noise zone map of Chicago. I took three quarters of a mile as the distance at which a railroad or a railroad yard was a real detriment to the community from the point of view of noise and soot especially. It was astonishing to find the small areas left in Chicago, many of them less than a square mile in extent.

The plans of the Illinois Central in regard to the lake front are interesting in this connection. Their desire is to utilize for industry their entire right of way in the city which to a great extent runs through residential sections. If we establish a residential zone along their right of way it would be a very great hardship to the Illinois Central and we must consider the railroads. In the small town which has a future as an industrial center it may be comparatively simple, but the job is the revamping of the city plan, to undertake, as in

Ottawa, Canada, the removal of several miles of railroad from the center of the city with a view to making a more homogeneous situation. In a city like Chicago, which is cut up as I have indicated into such a number of small areas which are comparatively noise and soot free, the nuisance is much greater than if the railroads had been concentrated or rather grouped in a more simple way so that the industries would grow out from the railroads and would not have encroached on residential districts. The only hope I see in a situation like that in Chicago is to use extensively the principle of electrification.

# WILLIAM C. STANTON, Philadelphia:

In connection with Mr. Bennett's remarks about revamping a city plan, and the removal of the railroads, I'd like to call attention to the removal of railroads in South Philadelphia. The railroad lines which originally crossed that territory and cut the section off from development for a number of years are now in process of removal, and the territory is already beginning to respond. This removal is bringing the railroads alongside the river banks and the industrial sections will then be moved along the railroads where they will have the advantage of both river and railroad. This situation is found in South Philadelphia and also in the section below Philadelphia in Delaware County, which we hope will some day be a part of Philadelphia. We have the industries, back of that runs the railroad, and in back of this industrial belt is the higher ground, which is a rural section now, but which later will be occupied by the houses of workmen. Topographical conditions will of themselves zone that section.

## MR. OLMSTED:

In connection with the question of war industrial housing a few facts that have come to our attention in Washington have some little bearing on the question Mr. Goodrich raised in regard to houses within walking distance of fac-

tories. It has been quite striking in one community after another in trying to find the most available sites for additional houses, to meet the emergency created by the abnormally rapid expansion in certain industries, that we have had very conflicting testimony on that very point. I think the fact is very general that a considerable proportion of the workers have a strong personal preference for getting entirely away from their work and living in another part of the city. Others have an equally distinct preference for being where they can walk back and forth quickly. You have simply different points of view of human beings, and you will get them every industrial community. You must shape your city plan as far as practicable so that people will get what they want.

Abnormally rapid expansion of certain industries has thrown a very heavy strain upon existing housing facilities within easy walking distance or reasonable trolley ride of the factory, and there has resulted bad house congestion. To relieve this house congestion there has been expansion into more distant places which has brought in turn a heavy strain on transportation facilities. The means of relief with Federal aid are, first, getting additional houses within walking distance, and second, improving transportation to the more distant residential communities. It must be born in mind, however, that because of the already overloaded condition of the local trolley transportation system, it is much more desirable where the sites are available to build additional houses within walking distance of the factory.

# BLIGHTED DISTRICTS IN ST. LOUIS

#### NELSON CUNLIFF

Commissioner of Parks and Recreation, St. Louis

St. Louis has two blighted districts, one east of Grand Avenue which is the section broadly speaking between 18th Street and Grand Avenue and between Market Street and Cass Avenue; the other is west of Grand Avenue and runs from Grand Avenue to Newstead Avenue with about the same boundaries on the north and south. In these districts are principally old-fashioned but very well built residences, formerly occupied by the wealthy families of St. Louis. The material and workmanship in the buildings are of the finest quality and blight has not resulted because undesirable people have moved into these neighborhoods, but because St. Louis has demanded for the exclusive residence sections a much larger acreage for each residence. In these blighted districts today these buildings are used as boarding houses for a large proportion of our negro population which is one-tenth of the total white population. incoming of the boarding houses has not been the primary cause of the blight which is, I believe, a lack of forethought on the part of the municipality. In spite of the moving out of the first owners and in spite of the fact that it was no longer to use the sections as exclusive residence districts there has been no lessening of their assessed value on the city tax books. In order to pay the taxes therefor it has been necessary to encroach on the district with all kinds of structures, garages, automobile repair shops, oil filling stations and the residences that remain have of course greatly depreciated in value. The district is within five minutes' ride on the trolley from the heart of St. Louis and there has

been a certain amount of commercial and industrial development there but not enough to justify the present assessed value.

The blight that I have described has been a great economic loss to the city and to the property owners. Both of the sections together comprise about eight square miles, approximately one-seventh of our total area and within the last five years there have been no permits taken out for residences and very few permits taken out for any other kind of development in either of the districts.

The districts are not suitable at the present time for firstclass residential development, that is out of the question, but they might be developed through zoning for industrial and commercial purposes. There are trackage facilities which would induce industrial development that calls for transportation by railroad. There are also great opportunities for light manufacturing plants with a local residence district, within easy walking distance. It might be possible also to raze the buildings in certain sections of the districts and have them laid out new for industrial districts and the residential zones that go with them. We might follow, in other words, the umlegung system of Germany under which the municipal authorities take large sections of land, raze the buildings, replot the area, build new buildings, and return to the owners their holdings, or as near their original holdings as possible, and then develop the district through co-operation of the municipality with private owners.

I believe, however, that before anything can be done, complete tax readjustment must be brought about. These districts are assessed to the limit and our assessors will not recognize the hardship until a zoning plan has gone into effect.

I believe that there will be blighted districts in all cities in which there is any degree of expansion through commercial development. Residence districts will always expand more quickly than industrial districts. I believe one solution of the problem is to synchronize the residential development

with the industrial development, to so plan industrial development that it will be possible to anticipate the residential development. If that can be done we will meet the requirements of industries and meet the demand of workmen for certain types of homes.

I would not have you confuse the districts I am describing with the sections of the city which you saw coming in to St. Louis on the train. I would not attribute the river decay to the same cause that I have outlined in the blighted districts. Our problem on the river front is one of industrial development entirely, bringing back to the river front the means of transportation that are needed in order to develop warehouses and other industrial buildings.

I believe that the blighted district can be eliminated only through zoning and the sooner that cities recognize this and put in the proper zoning regulations, the better it will be for them.

### DISCUSSION

## EDWARD M. BASSETT:

Sometimes increased industrial vehicular traffic has caused people to move away from private homes. Does that have any bearing in St. Louis?

## MR. CUNLIFF:

I would attribute the moving westward of our people both to the industrial development in the downtown district and to increased vehicular traffic. On one street within the last five years there has been an increase of over 200% of the east and west traffic which has necessitated the widening of the curb lines of all our east and west streets. Traffic has greatly increased. People have desired to get out into the open districts where the traffic conditions are safer for children.

Replying to a question about the percentage of property depreciation I should think that some of the property had fallen much more than 50% in value. I do not mean the ground value, but the building value. Certainly the ground value has not increased.

#### MR. CRAWFORD:

Mr. Cunliff spoke of the habit which has been developed of moving out to the country. We have made a mistake in America of not expanding our city limits in accordance with that growth. Heretofore our city limits have been those reached by our vehicular traffic. The automobile has in physical fact extended our city limits. They ought to be legally extended in the same way. Of course, when you get a growth like that, the people that go out leave properties behind them. That causes temporary trouble, but in the long run it does not, because the people who can afford to be ten or fifteen miles out are not in competition with those who can't afford to be so far out; therefore, values are not apt to be so high as to interfere with the possible ownership of their own houses. In Philadelphia, we have 250,000 houses, 50,000 of them owned by the men that live in them, because they are two-story, single-family houses, running from \$16 to \$25 a month in rental value.

In the last census the figures of twenty-five metropolitan areas are given. The metropolitan area as defined by the Census Bureau is the area within ten miles of the city limits. It is shown that while the growth inside the city limits of these twenty-five areas is about 33%, that outside of the ten-mile areas is 43%. I don't doubt that that will be very much more emphatically shown by the next census.

Again, Mr. Cunliff spoke of taxation. When you come to these blighted districts you always have the difficulty that taxes lag behind values as they go up, and they also lag behind values as they go down.

## BLIGHTED DISTRICTS IN PHILADELPHIA

### WILLIAM C. STANTON

Secretary Comprehensive Plans Committee, Philadelphia

There are comparatively few really blighted districts in Philadelphia. Many of the districts which might be termed "blighted districts" are really those which are in the course of transition due to healthy civic growth. In others, however, conditions exist which will not be remedied for some time and which are detrimental to property values.

Before proceeding to discuss the subject of blighted districts, it is well to understand exactly what is meant by such districts. Numerous definitions have been advanced, all

more or less satisfactory, but each definition can be modified by the special conditions existing in the various districts.

There are districts which have really depreciated in value and again there are other districts which have not depreciated, but which have failed to improve in the same ratio as the surrounding districts. These latter are as much blighted as the former although there has been no depreciation in value. It is really very difficult to determine exactly, therefore, what is a blighted district, and whether to consider solely the financial aspect or to consider also the sociological aspect of the subject. The broadest definition of a blighted district might be that it is a district which is not what it should be.

It is particularly difficult in Philadelphia to determine exactly what is a blighted district because here the land and building values are assessed as one. As a general rule, buildings slowly depreciate from the time of their completion, while in a growing community land gradually appreciates. It is on the land that the value of the district should be com-

puted and the rise and fall of these values should be used as an index. Where the increase in land values is counteracted by the depreciation of the buildings, an apparently blighted district may result, although in reality such is not the case.

There are several causes for blighted districts which are common to all cities, Philadelphia included. Districts may become blighted from the general depreciation of the improvements in the districts. Buildings erected upon the land will in the course of time wear out, the rate at which this occurs depending generally upon the initial construction and the character of the tenants. Such depreciation occurring over a large built-up area is bound to lower the character of the neighborhood, with the result that the population or business gradually moves into a newer class of buildings more in accordance with their standards, and their places are taken by a poorer class population which is not so concerned over the depreciation of its properties. This gradually continues until an originally high-class neighborhood may have degenerated into almost a slum section.

Again, the character of a neighborhood may be changed by extraneous conditions. Houses in a district properly maintained and suffering but little actual physical depreciation may be vacated by their owners in favor of newer and more modern houses provided with electric lights, modern systems of heating and plumbing and other up-to-date accessories, which are so tempting to the home buyer. This permits a fall in value of the older houses as but few will buy them when for the same price they can get a more modern affair. The result is that in order to sell them, prices are sacrificed and the values in the neighborhood correspondingly fall. As values fall, they attract a more undesirable class and the result is that the neighborhood, if not properly checked, is very apt to degenerate into a low-class district.

Again, there are certain "depreciatory improvements" which react disastrously upon a neighborhood. The introduction of new lines of railroads and the creation of freight

yards with their adjacent manufacturing plants, have in several instances, due to smoke and noise, caused depreciation in localities of Philadelphia. The construction of elevated railroads has also had the effect of increasing values in the vicinities of the stations while in the zones between stations, values varied considerably. The relocation of surface car lines removing or curtailing transportation facilities—in some districts—generally has had a depressing effect upon values.

Various districts depreciate in various ways. Manufacturing districts are more stable and any depreciation is generally slow and from outside causes. It sometimes follows financial panics when industries are compelled to close and the buildings are left vacant for some time. This, together with a number of forced sales at lower figures, results in setting a lower standard of values which often for a considerable time affects values of the surrounding properties. Business districts are apt to depreciate when changing character as, for instance, from wholesale to retail business, and also when changing from a higher class to a lower class trade. Instances have occurred in Philadelphia where business districts have been considerably depreciated due to shifting of the business center. Business districts are also considerably affected by the inroads of manufacturing districts. While Philadelphia has not suffered so much in this respect, there are examples in other cities in which the loss occasioned thereby was considerable.

Residence districts are affected in various ways before stated and also by the inroads of business and manufacturing. The gradual growth of these into a medium grade residence district does not depreciate values but rather tends to increase them as the property owners hold on to their properties with the expectation of a profit. On the other hand, if business makes inroads into a high grade residence district, it is much more affected as the property owners in such districts are generally desirous of maintaining the privacy of their homes, object to such inroads, refuse to stand for

the inconvenience caused by the adjacent business and move out. These owners generally being in better financial circumstances, can afford to sacrifice their properties at a loss, which results in possession by a lower grade tenant either for himself or more probably for the opening of a boarding or rooming house, for which the construction of large properties is often well adapted. In either case, the general character of the neighborhood is lowered and the tendency is for a general exodus of the higher grade property owners. Such districts generally pass through the rooming and boarding house stage to that of business.

The section of Philadelphia in which the greatest depreciation has occurred is the section lying between Arch and Lombard Streets, Sixth Street to the Delaware River. this area at one time lived the old aristocratic families, but practically all of these have moved out and their fine old residences are now occupied by a foreign population, in some cases four or five families living in each building. General depreciation in this territory has been approximately 50 per cent, although recovery in some instances is occurring. Market Street has entirely recovered due in a great measure to the construction of the subway and general street surfacing improvements. Chestnut Street has recovered as far east as Third Street, but beyond this to the River values are still down. On Walnut Street, this recovery has only reached east to 4th Street. This is due almost entirely to the insurance business which has created a center along this street. The reason for the general depression in the entire area was due to the general exodus of the old aristocratic families, moving farther west or to the suburban sections of the city. made more available to them by the increased facilities of transportation and also to the general movement of business west to the vicinity of Broad and Market Streets, due to the removal of the center of City Government and the law courts to this location, the legal profession following west and establishing themselves around the new City Hall.

The old business district of Philadelphia, which was lo-

cated along the river front and along Front and Second Streets has gradually moved west also, and its place has been taken by a wholesale district.

The recent activity along the water front due to the activity of Philadelphia's port, has begun to have its effect upon property values and it is expected that a considerable increase in these will take place.

The West Walnut Street section has suffered considerable depreciation in the last few years, values in this locality having dropped about 30 per cent. This is due in a great measure to the abandonment by the wealthy families of their properties in this section and their removal to the suburbs. Business, apartment and boarding houses have begun to make inroads in this territory and even the presence of Rittenhouse Square has not been sufficient to maintain values.

A considerable area in South Philadelphia has been held back for some time due to the presence of railroad lines crossing this territory and also in part to the low, swampy character of the ground itself, but these land values have recently shown a marked increase due to the action of the City in taking steps toward the removal of the railroads, the filling in of the land and the creation of a new system of streets, parks and improvements in this section.

Property values along Arch Street and in the old Fairmount section have shown a gradual depreciation for some time, the character of the neighborhood having changed from a rather fashionable residence neighborhood to a semi-business and boarding house neighborhood, excepting the neighborhood of Logan Square, the presence of which has acted somewhat as a stabilizer. This is the section through which the Parkway has been cut.

The presence of the railroad line on Pennsylvania Avenue with its adjacent industrial plants, such as the Baldwin Locomotive Works, has suppressed values along Spring Garden Street and in its vicinity. This was once a rather high class district but the buildings are now rather anti-

quated and the owners are gradually moving to more modern neighborhoods.

In the northeast, in the vicinity north of Girard Avenue, changes in population and value have caused the influx of a considerable number of colored people.

In several other sections of the city, there has been depreciation particularly in the old sections where inside courts and dead-end streets still persist. These are no longer permitted under our Philadelphia laws, and the existing ones have gradually depreciated their neighborhoods.

In a section of Germantown there exist two dead-end streets which have been unimproved for about 40 years. The houses erected upon these streets have depreciated and conditions are now such as would no longer be tolerated. These properties, however, have been recently purchased by an interest which has considered them detrimental to the improvements and developments which are proposed in that section, and this blight upon the surrounding territory is therefore being removed.

There are several other sections of Germantown in which old dead-end streets under special conditions have depreciated the value of the properties abutting upon them. In many cases these have been improved by the cutting through of the streets, eliminating the dead-end. In one instance, the houses upon such a street were occupied by the workmen of an adjacent quarry. This quarry has been purchased by the city and turned into an attractive playground, the street has been cut through and the neighborhood has improved considerably.

Some sections in the northeast have been blighted through the presence of adjacent undesirable industries, and also in one instance by the pollution of Frankford Creek. This latter condition, however, is now being relieved and it is expected that the district will fully recover.

A considerable district in the Mantua section of West Philadelphia has been depreciated by smoke from the extensive Pennsylvania railroad yards created here within

the last few years. This was a particularly attractive section, many of the houses overlooking the Schuylkill River and Fairmount Park, but upon the creation of these yards by the railroad, with the resultant soft coal smoke, the property values suffered a decided reduction.

In the vicinity of 56th and Chestnut Streets, in West Philadelphia, a small section has been depreciated because it was built in advance of adequate transportation, with the result that the owners were compelled to secure low class tenants at a small rental. This section has not yet recovered although adequate facilities have been since provided. In the vicinity of 54th and Chester Avenue, a row of large houses was erected also in advance of adequate transportation. These houses remained idle for several years and when the transportation was provided, the neighborhood developed into a medium class dwelling and business district. This caused depreciation of these properties and their ultimate conversion into apartment houses. Several undesirable conditions exist also in the immediate vicinity of the Midvale Steel Company.

A glance at the map of Philadelphia will indicate its growth, The plan prepared by Holme was for a rectangular system of streets approximately two miles long between the rivers and half mile north and south of Market Street. The early settlers naturally located close to the Delaware River bank and it was the thought of the founder that both river banks would become populated first and that this growth would extend backward until the built-up area met in the center This, however, was not the case as the Delaware River front was always more popular than the Schuylkill River front and the growth of the city resembled a huge triangle with the Delaware River as a base, the apex of which gradually moved west on Market Street. The Schuvlkill River front was but poorly populated for a considerable time and has never enjoyed the popularity of the Delaware River front. The outlying sections developed independently and gradually grew together, joining the central or Philadelphia proper section and each other, and the areas lying between the different sections were regulated and planned sometimes rather more poorly than the heart of each section, the result being that these areas are more cut up and liable to unstable development, tending to become blighted more rapidly.

Business centers developed in each of these sections independently and gradually spread—in some instances spoiling residence districts in their vicinity and causing great changes in neighborhoods. Sometimes there was a rapid recovery due to the growth of the value of the land for manufacturing purposes. In each of these districts, the residence sections were first charged by the influx of business which was then affected by the influx of manufacturies, this latter oftentimes bringing with it a considerable laboring class, which moving into the slightly depreciated residence districts caused by the above changing conditions tended towards further depreciation.

Cures for blighted districts are several. In the first place, it is well to encourage a permanence of the individual improvements upon the land. A structure which depreciates slowly will tend to maintain longer the character of the neighborhood in which it is located. For this reason, strenuous objection has always been made by the city of Philadelphia to any housing project which contemplated the erection of flimsy structures for the housing of workmen, as it was felt that within a few years, these structures would degenerate into mere shacks, especially in view of the fact that as a rule they would not be occupied by the most careful class of tenants.

Many of the older sections of Philadelphia in which attractive houses were erected, particularly those surrounded by small gardens maintain their values steadfastly although the houses are old-fashioned and not modernly equipped.

Judicious municipal improvements in a blighted district generally tend to rapidly restore values. There is the added advantage that when a district has depreciated and property

values are low, improvements can be made most reasonably, which is an open invitation for a municipality to make in a blighted district such improvements. These may be in the form of a park, playground, boulevard or recreation center.

A great preventive in the future for blighted districts will be the zoning of the city whereby the various districts will be confirmed and building therein regulated. Under proper zoning regulations, practically none of the depreciatory causes affecting the values of real estate will be permitted. Residence districts need never fear invasion by business or manufacturing, and business and manufacturing districts will be properly protected against undesirable industries. Light and air to all buildings will be assured, and overcrowding of buildings will be prevented.

Philadelphia is taking an active part in all such improvements destined to prevent blight in its various sections. It is creating a magnificent Parkway from City Hall to Fairmount Park through a section in which values had at one time dropped considerably and in which values are now beginning to rise. It has created numerous parks and is making a practice of condemning the beds of all streams within its limits for this purpose far in advance of the encroachment of buildings. Numerous playgrounds and recreation centers are being provided in all sections. Great railroad relocation and removal schemes have been successfully carried out in South Philadelphia and Southwest Philadelphia, making available enormous areas of land which heretofore have been unavailable. A comprehensive scheme of rapid transit has been evolved and will be carried out at the earliest opportunity, throwing open the most extreme sections of the city to development, raising values in varying amounts at numerous points. In addition to the steps which Philadelphia is taking, the great manufacturing and shipbuilding growth along the Delaware River has assisted materially in raising land values all over the city, and properties which had depreciated for various reasons are now in great demand due to the scarcity of houses. Old properties are being re-

paired in greater numbers than ever before and values which had fallen are thus being regained.

Greater than any of the steps which Philadelphia is taking, however, is that relating to zoning. The Zoning Commission as pointed under the authority of an Act of Legislature on May 11, 1915, has been making detailed studies and has adopted tentative regulations for the protection of properties within the city limits, and it is hoped that when these regulations are finally adopted, the "blighted" district in Philadelphia will have become a thing of the past.

### WAR HOUSING

#### FREDERICK LAW OLMSTED

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On the 9th of May, a year ago, the National Conference on City Planning at Kansas City adopted two resolutions and charged me as President with the duty of presenting them in Washington and following them.

Whatever the influence of those resolutions upon the general course of events, they have at least profoundly affected the activities of your President during the past year and I trust you will pardon me if my address takes in part the form of a personal narrative of what befell me in pursuit of the duty you laid upon me.

In brief the resolutions called the attention of the Washington authorities to the importance of utilizing the principles and methods of city planning, and the experience in such planning accessible through this organization, in dealing with two distinct classes of urgent war problems. One was that of creating communities for the training of soldiers and the other was that of creating or expanding industrial communities in connection with the production of war materials.

It happened that Mr. Mauran, President of the American Institute of Architects and one of the speakers at our Kansas City meeting, was already in consultation with the Washington authorities in regard to an offer of architectural services from the members of that Institute and he promptly arranged for an interview with the chairman of the General Munitions Board, afterwards the War Industries Board, of the Council of National Defense. Accompanied by George B. Ford and E. P. Goodrich as a committee I presented the

resolutions to the Board. We were received politely but without enthusiasm and referred to the Board's committee on Emergency Construction, of which the chairman was Major, now Colonel Starrett, an architect of New York City and formerly Vice-President of the Thompson-Starrett Construction Company. That committee had been created but a short time before to advise the executive branches of the Government in regard to the methods of dealing with emergency construction of buildings and engineering works and it was most actively concerned with the pressing problem of building cantonments for training troops of the first draft for which no executive machinery had yet been designated. The efforts of the committee had been concentrated chiefly upon the problem of an administrative agency for driving this colossal undertaking through with the necessary speed and especially on the form of contract and method of selecting contractors. After a little discussion they welcomed the contribution we had to offer in regard to methods of getting these military cities planned for health and efficiency as well as the pressure of time would permit, and within three days I was appointed a member of their committee. Since which time, like thousands of other volunteers, I have been keeping at it to the practical exclusion of everything else.

#### PLANNING THE CANTONMENTS

On behalf of the City Planning Institute and personally the principal contribution resulting from this work has been the bringing of responsible executives in Washington in touch with the point of view of practical city planning, in touch with men of experience in dealing with the interrelations between planning in the wide variety of special technical fields involved in making complete cities, men who recognize both the need of specialists in many fields, and the need of getting them to work together as a unit on a problem too complex to be fully understood by any one of them.

The most needless shortcomings have been due on the one hand to the difficulty of convincing individuals in authority of the existence of certain really serious problems of planning calling for specialized technical training and experience to solve them economically and well, and on the other hand to the difficulty of getting thorough cooperation between such specialists without too great sacrifice of efficiency and speed in the work of each.

At tomorrow morning's session there will be a special discussion of the town planning work in connection with the Cantonments and as tonight's special subject is the housing of industrial war-workers I shall give only a brief outline of the early stages of the cantonment planning, leading up to the field work of the individual planners at the various places.

The day after I landed in Washington with your resolutions it was decided by the Secretary of War to put the design and construction of the Cantonments in the hands of a new administrative division of the Army attached to the Quartermaster Corps but distinct from the other work of that corps, and our committee on Emergency Construction were made official advisors of that Division.

The Quartermaster Corps had had the responsibility of planning and constructing the small cantonments and camps which were all that the army had had to do with up to that time. Col. Littell was placed in charge, two majors from the Quartermaster Corps were attached to his service and two civilian employees of the Quartermaster Corps, an engineer and an architect, all of whom had had experience in the work the army had done on a small scale. With about half a dozen clerks these constituted the cantonment division the day it was created. Col. Littell's instructions were to confer with the committee on emergency construction and get their co-operation and advice in organizing his division and handling the work. The committee was drawing about it men of experience in the fields of contracting, of engineering, of architecture and town planning. A form of

organization was drawn up for handling the work and was recommended to Colonel Littell, and, with very slight modifications, was adopted by him, and we also advised him as to the personnel for the expansion of the division, which grew in a few weeks from that small nucleus until it. was occupying four floors in the Adams Building in Washington. Studies had already been prepared in the Quartermaster Corps for one story barrack buildings and schemes of general layout. A lot of us went to work on those, analyzing them, discussing them, suggesting improvements and alterations; and out of all the very intensive and very rapid study that was given, the division adopted a typical general plan for a cantonment which, upon a level and unobstructed site would provide, conveniently and efficiently, for the housing and operation of the units of which an infantry division was then expected to consist, and of the supplemental services; keeping in mind primarily, extreme economy and speed of construction, the health of the troops, and the safeguarding of these quickly built wooden towns from excessive conflagration risk. The typical plan then adopted provided for a two-story barracks, with which nearly all of you have become familiar. It went through several modifications before they finally got erected, but the general form was very much as you have seen them in the larger and older cantonments. Later on a smaller two-story barrack building unit was developed, in response to recommendations of a board reporting through the surgeon-general, a board with which Mr. Veiller co-operated, mainly for reducing the number of men sleeping in one room, so as to minimize the spread of infectious diseases. That was the principal change which has been made in the type of barrack building as a result of experience.

The typical general plan of cantonment layout was drawn up with a careful analysis of the reasons for that arrangement and an explanation of the limitations controlling the variations from that general arrangement which would be permissible in fitting it to the peculiarities of topography.

In all of this preliminary work a good deal of help was rendered by city planners, along with others. I think, however, that our most important contribution to the cantonment work was in adapting the general requirements, as expressed in the typical plan, to the local peculiarities of topography. Every one with any knowledge of city planning realizes that when you come to plant down a city of 30,000, 40,000 or 50,000 inhabitants, there are very few localities where a typical plan, adapted to a perfectly flat site, is practicable or desirable.

The second stage, therefore, of the work, and as I say, in many ways the most important we had to do with, began just as soon as the Secretary of War decided upon sites for the cantonments—decided upon them successively, announcing one today, another three days later, and so forth. Just as soon as it was known where a cantonment was to be located, before there was authority to go ahead with the construction, before there was an appropriation available for doing anything about it, we called upon men of experience in city planning, in sanitary engineering, especially in water supply and sewerage, to go at once to that site, start their investigations, start the topographical maps, and begin preliminary studies of the adaptation of the typical general plan to that particular location. Even after work had started on several sites changes were being made in typical plans. They were made after the buildings were started, again and again, because the military organization of the division which was to be housed, the number of men in the company, the number of men in a regiment, the number of men in a division, was being changed by the general staff from day to day, while the plans were being developed for housing the men; and of course the housing had to conform to the military units and their relation one to another. So that it was like swimming in buffeting rapids; for we no sooner had what looked like a pretty good solution for the problem analyzed and worked out than a new factor was thrown into the problem by the general

staff. Sometimes successive instructions came down in 15 or 20 minutes, changing previous orders, because at that time the general staff was intensively engaged upon the study of the best organization for the army. The cantonment plans had to be changed to meet these new requirements almost from day to day in the early stages.

The work of the town planners in the field, collaborating with the water supply and sewerage men and other experts. and with the military men, was especially that of adapting these protean typical general plans to the local topography. to readjust all the essential requirements of a very large and complex plan so as to make it possible to get it on the space available, to do it economically, without excessive grades or grading, without having the buildings run too far off into space when one end rested on the ground surface, and without otherwise running up the costs; speed of construction, however, being the first consideration, outweighing everything else beyond that of healthful conditions for the troops. As I have said, the acquaintanceship of the group that got together at Washington with men of experience in different parts of the country, and with the character of their respective experience and abilities, was perhaps the most valuable thing we contributed there in Washington. Our group included Mr. Leonard Metcalf of Boston, for example, and Mr. George W. Fuller of New York, in the matter of water supply and sewerage work; and others called in by me or by those I had called, men of a nation-wide experience with technical problems and with technical men. So we were able, as soon as it was said there was to be a cantonment at such and such a place, to form some judgment of the kind of problems that were likely to arise in that place, on account of the prevailing topography, on account of the prevailing water supply conditions of the region, etc. One of us could say we had better call on so-and-so from such-andsuch a neighboring city, he will be a good man to put on that job. He is perhaps not fully equipped to handle such-andsuch a side of the work, but we can supplement him by

so-and-so. Thus we were able to pick out groups of men who could be turned loose at their problems in the field with the confidence on the part of the Washington headquarters that they would find sane solutions and reach safe conclusions quickly, because of their familiarity with the class of problems they were being put up against. Telegrams were sent to such a group of men just as soon as the site for a cantonment was announced by the secretary of war. They were asked if they would drop everything and go and serve the government in this matter; they were told that no appropriation was yet available, but it was hoped they would go, nevertheless, and get to work; that their expenses and perhaps something else might be paid when an appropriation came along. No one ever hesitated a moment about going out and jumping into the job and driving it through. And on the whole they did very good work and saved a great deal of floundering and a great many mistakes. This was evidenced in the case of certain camps which, for various reasons, had to be built without the preliminary planning work by such groups. Differences in the results are plainly to be seen.

#### INDUSTRIAL HOUSING

In regard to the matter of industrial housing, it was perfectly evident to us, perfectly evident to a lot of people who thought about it closely, as early as last May, that the government was "up against" a very serious problem of housing shortage in certain localities where the rapid expansion of war industries would inevitably overtax the housing facilities in the community; but, as I have already said, we could not make much impression in Washington when we went down there. During the summer the problem began pushing its head up, becoming more and more conspicuous, and did make an impression. A committee of the Council of National Defense, under the chairmanship of Mr. Philip Hiss, worked on it during the summer and established con-

clusively the need of action to relieve a number of these situations.

The special, acute war-problem of industrial housing, as distinguished from the chronic peace-time problems, of which it is an intensified outgrowth, may be stated thus:

The effective prosecution of the war has required an incredibly rapid alteration and expansion of many existing industries and the equally rapid creation and expansion of wholly new industries. These primary war industries, such as the making of guns, ammunition, ships, are dependent upon a complete chain of secondary or underlying industries. going back through the making of special parts like the chronometer or the condensers, without which ships are useless, no matter how fast the ship yards turn them out, and through the making of the tools of manufacturing, like pneumatic riveters and air compressors and factory buildings. to the basic industries of mining and agriculture. A great multiplication of output in the primary industries cannot take place without corresponding expansion or diversion of effort in the secondary industries on which they rest; but while there is in many cases so direct a relation between a primary and a secondary industry that fluctuations in pressure for output are quickly transmitted from one to the other, as, for example, where the shipbuilders order steel in quantities and at prices which divert the steel from less essential uses and at the same time stimulate its production: in other cases the relation is so indirect that the response of the secondary industry is apt to lag behind; especially in the great secondary industry of providing houses where they are needed for the workers, is this lagging normal. Houses are not built and torn down from week to week, with the fluctuation of the demand in any locality, like extra grandstand seats for a football game. Only if a sudden increase in demand for houses continues, not for a week, but for months, with prospect of continuing for years, is it followed by a gradual increase in the rate of house building; a decrease in demand is followed rather more promptly by

a decrease in rate of building and if severe enough and long enough by the demolition or decay of buildings, for which no use can be found that would justify their maintenance.

What ever fault is to be found with the complicated, indirect and groping business mechanism through which the demand for housing in any locality is normally translated into occupied dwellings—and it is beset with many faults—no one who fairly considers the matter, but must agree that in the long run its characteristic of conservative slowness in responding to sharp fluctuations of demand is economically sound.

The investment of labor and materials in creating a decent modern home for a worker's family, with its share in the utilities and amenities of a civilized community is very large compared with the average investment per worker for industrial plant and equipment, and the world is not rich enough to afford much building of good homes in response to evanescent demands, only to let them become wastefully idle.

In peace times the economic advantages of any rapid expansion of industry, before they can speed up the ponderous and costly mechanism of house building, must prove their endurance by overcoming the resistance of the slow acting friction clutch, which consists of overcrowding, high rents and human suffering. We need to improve the mechanism of that friction clutch, to get the sand out of it as far as we can; but for economic reasons, the clutch is unavoidable, and its slow operation will always hurt somebody, more or less.

In the face of war necessities, however, such an essential secondary industry cannot be accellerated fast enough through the use of the customary friction clutch mechanism; it has got to be started by direct action with a jerk, and any waste and extravagance in the operation charged up to the colossal wastage of war.

In places where the demand for workers in expanding war industries has greatly exceeded the withdrawals of workers

from less essential occupations in the same locality, there has been on the one hand an unprecedentedly rapid increase in the demand for housing. While on the other hand, three abnormal conditions have operated to slow up even the normal conservative response to such demand. These three factors are: first the high cost and difficulty of building in competition with other war-time activities,—second, the high cost and difficulty of securing capital for building operations in a tight money market,—and third, in some cases a doubt as to the permanence of the increased demand. At most places, these three factors had resulted in a marked reduction of the amount of house building per annum, even before we entered the war, in spite of the rapidly increasing demand at some of these places.

When you sent me to Washington last May with the resolutions of the Kansas City conference, it was evident that the ordinary mechanism of demand and supply would be inadequate for quickly meeting the needs of the case, but it was impossible to make much impression upon those in authority at Washington, overwhelmed, as they were, with more immediately pressing problems. But soon afterward. the Labor Section of the Council of National Defense took the matter up, and a committee, under the Chairmanship of Mr. Philip Hiss, conducted extensive inquiries, establishing serious existing and prospective restriction of the output of war industries, due to the inadequacy and over-crowding of the housing facilities. A prima facie case was made out for prompt direct action by the Government, and the prima facie case was reviewed by successive boards and committees and individuals, each reluctantly coming to the conclusion of its predecessors that something must be done by the Government and done soon, if our military power were not to be sapped by serious, avoidable delays. A definite and feasible proposition for immediate action was submitted through the Council of National Defense to the President in October by a Committee of the Council headed by Mr. Otto M. Eidlitz, and the project has been struggling through ad-

ministrative and legislative obstacles until, in this month of May, an enabling Act has passed, and an appropriation bill is under favorable consideration.

This long delay is not a mere exemplification of governmental red tape and circumlocution, and of the popular Washington game of passing the buck: although an appreciable part of the delay may be chargeable to such causes. It has been largely due to fear of certain grave and far reaching dangers, which seemed to beset any practicable method of accomplishing the result, and a desire to understand and as far as might be to forestall or circumscribe those dangers. The worst of the delay has been due to the necessity of convincing successively and de novo so many separate and practically independent authorities, first, that the need is great and urgent, second that the dangers and objections are not insuperable, third that there is a reasonable probability of accomplishing sufficient results to justify the costs and the risks involved. Our American Governmental habit of relying on the mere mechanism of checks and balances, of qualifying confidence with suspicion, of delegating responsibilities with leading strings attached, is a terribly heavy mill-stone for the country to keep around its neck in a war like this.

Some analysis of the fears which have obstructed permission to act, will be illuminating, because they still constitute the problems which must be met when action succeeds talk.

One group of fears—I am inclined to say the minor group of fears—relates to the possibilities of some kind of unfair incidence of the benefits resulting from hurried and arbitrary administrative decisions, of favoritism, of sectionalism, of pork-barrel politics, or some of the other politer forms of graft. For example, there has been a strong disposition to tie up any housing activities to the principle of letting contracts only to the "lowest" responsible "bidder" in free competition, a device which even in peace times is by no means so effective in practice as it is in theory, for getting

work done well and cheaply, which always involves delay and deliberation over plans and specifications and contracts before even the most necessary work can be started, and which becomes more difficult and expensive to operate under as the materials and labor markets become more nervous and uncertain, as they are in these days of war. There are conditions when the necessity for prompt action and the uncertainty of conditions surrounding a work make the only reasonable procedure an agency contract, when a contractor is hired on the strength of his past record for honesty and efficiency, to give his best services as the Government's agent, under proper supervision, in expending the Government's money for work of the kind he has shown his ability to handle for himself and others.

It is interesting to note that the two Housing Bills as passed do not definitely rule out the cost plus fixed fee contract, although there is strong Congressional preference for lump sum competitive bidding where practicable.

The major group of fears have to do with the danger of precipitating the Government, without deliberate intent, into commitments affecting far reaching and more or less revolutionary questions of policy. They include a healthy and well founded fear of governmental paternalism toward the laboring man; a fear of getting the Government into landlordism; a fear of the consequences of the introduction into a field so traditionally sacred to individualism as that of property rights in the workman's home, of the rigidity and arbitrariness in management which are so characteristic of Government control and which stand, even more than governmental inefficiency as the great practical obstacles in the path which thorough-going socialists would have us follow.

These are real dangers and difficulties, and I believe a great part of the delay in getting action on this matter so vitally affecting the war, is due to anxiety lest it be used to "put over" on the Government in the guise of a temporary war measure a step in the path of Federal Socialism from

which it might prove very difficult to withdraw, and which neither the Administration nor Congress wants to enter upon by indirection. National Prohibition has come very near to being put across under the camouflage of a war measure.

The long discussion has been educative, although by no means in proportion to the delay involved, and certain points have been successively cleared up. First, during last Autumn, the administrative policy was announced of giving deliberate scrutiny, before letting further contracts, to the local facilities for properly housing the work people necessary for the execution of the contracts, instead of trusting blindly that the contractor and the law of supply and demand would somehow between them make it all right.

Second, authority was given, where it should appear necessary to provide for housing of employees in connection with a new contract, to recognize that necessity in the contract and charge up the cost of the presumably temporary housing as part of the cost of producing the goods. Third, in certain cases where no provision had been made in the contract for building houses at Government expense, and when neither the contractor nor the angel of supply and demand had come forward to produce them on spec., and where intolerable delay in production was resulting for lack of housing, the contracting bureau was authorized to put up presumably temporary houses and charge up their cost as part of the cost of the guns, or whatever it might be that they were built to hasten.

Stress appears to have been laid upon the word temporary, in connection with these authorizations, partly in the belief that a temporary house is an economical thing for a temporary use, and partly because it camouflaged the problem involved in disposing of the remains of the house after its temporary use is over.

A house economically adapted to provide a comfortable and decent home for a period of a few years only will cost less than a house built to endure without extravagant repairs for fifty years or more, but the difference in first cost for houses of approximately the same degree of comfort and decency will not be as large a percentage as the two words temporary and permanent seem to imply; and in practice the houses we have to consider in each case are no more and no less than will suffice to keep their occupants healthy and reasonably contented.

As a purely economic proposition: if there is a clear probability of continued local need for such houses after the war the increased salvage at the end of the war period in selling the "permanent" houses, as against tearing down the "temporary" houses, would more than make up for the extra first cost of the former.

But really there are two or three social questions hidden in this matter of permanent or temporary. One is the fear on the part of some that "temporary" housing implies uncomfortable and unsatisfactory housing, even during the period for which it is designed to be used. Another is the fear that such buildings will not be destroyed when their temporary purpose has been served, but will be sold as they stand for continued use during the ensuing period of dilapidation.

It is well to say, therefore, that the policy seems well established in all the bureaus which have had to do with such temporary buildings, not to let them pass out of the hands of the Government, but either to wreck them when the Government's use for them is over, or to convert them into suitable permanent structures.

A third social question involved, on the other side, so to speak, in this use of the words "temporary" and "permanent" is the favorable suggestion which the term "temporary" conveys to the anxious congressional and administrative mind, that the whole nightmare of government participation in the business of civilian housing will end with the war, by virtue of calling the buildings "temporary," and designing them with the view to destruction, when the war ends.

How far have we advanced, after all this discussion and some legislation, toward the determination of these policies? I can tell you what has been done and what is upon the verge of being done. There is the case of the Government owned industry operated through an agency contract. That case has two branches, the first of which is the strictly temporary industry; for example, the Government loading plants for shell loading, built on account of the explosion danger, in isolated places, for a purpose which will cease with the war. There are several of these and they are Government-owned plants, but the plant is constructed by and operated by an agent contracting company. As they are wholly isolated, the housing for all the employes, running up to a few thousand in number at each plant, has to be provided. These are in course of erection now. They are under the direction of the Ordnance Department, and the attitude has been to put the burden of decisions about housing and community facilties as far as possible, upon the agency contractor who is to be responsible for operating the plant. The company has prepared the plans for the plant. and for the housing, subject to the approval of the Ordnance Department, and is going ahead and building them under the supervision of the Ordnance Department. There has been established, since the construction of these plants started, a housing service as a part of the general welfare service of the Ordnance Department, and they are now following these things up more closely. In a typical case the plans of the contractor provided, very properly, for temporary housing, since the whole thing is going to be wiped out and be of no use after the war. They are frame houses, covered with paper of a decent color-not black tar paper-but light colored roofing paper with battens on the joints dividing the wall into panels, like some of the attractive little cheap bungalows you see in Californianot bad looking little houses for the most part, and fairly comfortable for the climate in which they are to go. The bunk-houses—the dormitories for single men of the lower grades of labor in these communities—they were proposing to build distinctly below the standard that we believed would be desirable (double-deck bunks, four men to a compartment, etc.), but the Ordnance Department is intending to raise these standards. That is one class.

The second class, is that of agency contracts for Government plants of a permanent nature, like some of the nitrate plants. Permanent villages are there being built, again by the agency contractor. He is taking the initiative, supplying plans under the supervision of the housing section of the Ordnance Department. In at least two of these cases competent people have been employed to make plans, but the plans have not been brought to our Bureau for consultation and I can't tell you much about them. We expressed a desire to cooperate but they haven't come along.

Another class of cases are those where contracts have been let, especially agency contracts for manufacturing. let to existing plants with the provision for expanding the plant, without any provision for additions to existing housing, and where production is being slowed up seriously for lack of sufficient houses. In a few such cases the Ordnance Department itself is stepping in and erecting temporary buildings, mostly dormitories, to house additional workers men and sometimes women; usually comparatively small allotments, to meet a special crisis. These are being planned by the Housing Section of the Ordnance Department and built by the Construction Division of the Army which builds the cantonments. They are Government-owned, and just who is going to operate them I cannot find out, but they will be operated under Government supervision. They will be wiped out after the war.

Then, we come to the more numerous cases where the expansion of industry for war purposes in a permanent industrial district has been accompanied by a sharp reduction in the normal increase of houses. The expenditure by the Shipping Board of \$50,000,000 for housing in connection with shippards was authorized, and an act passed a very

short time ago authorized the President to expend \$60.-000,000 additional in other cases than those with which the Shipping Board is concerned. The President had not, when I left Washington, indicated whether he was going to turn over the administration of that act to the Secretary of Labor. whom he had previously designated as his representative in dealing with that problem, or not, but for two or three months there has been in course of organization, in skeleton form, a Bureau of Industrial Housing and Transportation, under Mr. Eidlitz, in the Department of Labor, anticipating the passage of that bill, and I have been serving as town The Shipping Board has actually planner in that bureau. got started on several projects. In one of these the method of management and control of the property is similar to that adopted by the Ordnance people with agency contracts; they have simply advanced money to the shipbuilding contractor, and that contractor has put the money into the erection of houses, just as he would put other advances he received into the construction of a plant. The contractor is responsible for the houses, although the plans were more or less controlled by the Housing Section of the Shipping Board. Their other projects have gone on the basis of a loan, the Government loaning on mortgage 80% or more of the value of the land and improvements to local companies, either subsidiary companies of the contracting ship builder or companies organized in the locality, the shipbuilding company having some interest in them. These companies, under the mortgage contracts with them, are to own the land, build the houses, make the necessary improvements, but are to act under a very close control by the Housing Section of the Shipping Board as to designers, contractors, plans, method of disposing of the houses, etc., a control so complete that the arrangement practically partakes of the nature of an agency contract, although it is nominally a loan, with a low rate of interest, and of such a large amount that the equity of the underlying company is buried out of sight, and tied up by the government with such a tangle of strings that there may be some question of divided responsibility.

In the Housing Bureau nothing has yet been done, except the preparation of plans for certain projects which seem imminent: because no appropriation has yet been made. There confront us three possible ways, to which we have narrowed down from multitudinous possible ways of handling the business. The Bureau can start in and acquire the land and put up the houses, employing the designers and the contractors direct and getting the whole thing going as a Government proposition, postponing the decision as to how the houses will be disposed of, whether sold direct to individuals or disposed of to an operating company. The second is to make a loan, as the Shipping Board has done. to a large percentage of the value of the land and buildings on a mortgage, with a close control over the operation, by the Bureau as lender and with the following proviso, to meet the case of possible deadlock through having an owner supposed to be responsible, but with the Government bureau telling him just what he must do. That is a dangerous administrative situation, especially where speed is essential, therefore the proviso is to be added that if they should, for any reason, get to a deadlock and things do not work well, the Government shall have the power until the loan has been repaid in full, to take over the ownership, by paying up to the company its actual investment, with six per cent interest to date, so that the Government can arrange for some other method of administration, if it should prove necessary.

The third method that has been considered is to unload the responsibility as completely as possible and as quickly as possible and have as little as possible to do with the thing, and the method proposed for that purpose is to offer, through local banking institutions as trustees, the loan of Government money to any reputable and responsible person who wants to put up houses of a sort to satisfy the need in question in that locality; simply a device for loosening up the

war-tightened money market and setting in operation the ordinary machinery of building, which has practically stopped in such localities. Broadly, that is the proposition. There are some strings that must be tied to it. Personally, I don't believe it is a good proposition, for with the high and uncertain costs of building at this time I don't believe it will lead many people to build promptly. These constructions will have to start pretty soon. When the appropriation bill passes there is going to be some action. My personal impression is that we could best resort to the first method I have mentioned, because the arrangements that will have to be made for going ahead in either of the other two ways will consume much time. I think the Bureau will have to go ahead, get land and build houses, and then find out when it gets a little more time how it is going to dispose of them, whether by sale to individual occupants, by placing in the hands of a corporation, with limited dividends, as an agent in disposing of them, or to such a corporation as a cooperative holding company involving the principles of the familiar co-partnership tenant system. We can take time to work these methods out, but the important thing is to get the houses under roof, get the workmen in them just as quickly as possible.

I have spent so much time talking about these perplexing questions which have delayed starting the whole enterprise, that I haven't been able to say much about the question of standards, physical plans, etc., and I ought not to take much time on it now. Mr. Veiller can tell you about the general standards in regard to the houses themselves better than I can, more authoritatively than I can. He worked with the rest of us at Washington in preparing certain standards which we hope to be able to attain in these houses. It is not so easy, as you can all realize, to prepare standards to guide city planning, or the planning of even a small portion of a city as it is to prepare standards to guide the planning of houses of a given size and number of rooms; but we have drawn up certain instructions to designers as guides. And

we intend to make sure, if we possibly can, of getting on each one of these problems a group of competent designers, who know their business; a good architect, a good town planner, a good engineer, or where the engineering problems are diverse more than one kind of an engineer, intending simply to steer them with general instructions, and to check their plans. But the main point is to get the right kind of group, willing and able to co-ordinate their several parts of the work with each other.

I ought to give you, in closing, just a word of warning, so that you will not be too much disappointed with what comes out of this government housing. At the present outlook it is not likely to lead, in many cases, to the formation of large, permanent, self-contained communities which can be developed as a city planner would like to see such a community developed: because the developments are supplementary in nearly all cases to large, extensive existing housing developments, and are often comparatively small in themselves. Other things being equal, the town planning division of the Housing Bureau has a strong natural preference for picking for a group of houses a locality which can be developed as a self-contained unit, with all the advantages which that implies, physically and in the matter of land values. We feel this way in regard to a group of only 200 houses or less, much more in the case of larger groups. it looks as though we should be forced, in many cases, for the sake of speed of construction, to wedge a not completely homogeneous development into the vacant spaces of existing communities. The item of promptly securing the necessary cast iron water pipe for extension to an isolated development and getting it into the street and getting water on the spot, which you must have before you go into your building operations, is one serious item of pressure in that direction. There are other pressures in that direction, which we are strongly resisting, such as the pressure of the local people to have the holes in their existing towns filled up, to have the vacant lots of disappointed speculators taken over by the

government. They won't be taken over at extravagant prices, but still they like to have them taken over at fair prices, rather than have them left on their hands. What we are trying to do is to meet these cases fairly as they arise, and do in each case what will most advance the winning of the war.

#### LAWSON PURDY

President National Municipal League New York City

Mr. Olmsted has told you a great many things about this war housing and has indicated one line along which I should like to see the United States proceed;-but before I take that up, I must spend just a very few minutes in running over the conditions that existed before the war in respect of house supply and labor supply. To get a steady, constant labor supply we must have a reasonably good house supply: to win the war we must have a labor supply. In the views I express I do not depart one jota from the fundamental that has been laid down here that everything is subordinate at this time to pushing forward everything that has to do with the war. It is because I think that the plan I propose to you will help accomplish that result that I propose it now. I believe, also, that it will help to solve some problems when the war is over.

As to our labor supply before the war, a good many of you know now and didn't know three years ago, I didn't, how very serious has been the labor turn-over in the large industrial plants of the country for a good many years past. The conditions of the last three years have intensified the problem of getting and keeping labor, both unskilled and skilled. Before the war, in some of our large plants the annual labor turnover was more than 500%. In some plants since the war, it has been more than 100% a month. To some of you that may mean nothing. I will explain. If you need to keep 1,000 men employed, you must hire 1,000 men every month to keep a thousand men in the plant. Every

person familiar with industry knows that the efficiency of labor depends in large degree upon its steadiness, and if you are hiring a new force every month, your efficiency is exceedingly low. Some of the efficiency experts have made computations to show how much it costs an industry to install a new man and get him working. It is in the neighborhood of one-fourth of a year's pay in any event.

Before the war we depended almost exclusively in the United States for houses upon speculative building. speculative building I mean building houses to sell again and not to own as investments, either by the occupant or by a capitalist. In some cities where multiple houses are more common than single-family houses, that being true of the City of New York, there has been almost no building for occupancy or for investment. Almost all the building of dwellings, either single or multiple, has been for sale. The general practice is for the builder to supply as small a fraction of the cost as he can. He shops around to get the largest building loan practicable. Not uncommonly he gets a building loan equal to 80% of the cost of land and building. His margin is small;—the danger of loss great. The possible profit must be large to warrant the hazard. When all goes well, when he builds in the time he expected to build. at the cost he expected would be the cost, when he sells quickly, and the building stays sold, he may make a very satisfactory profit. The percentage, however, of failure of builders is very, very large. You would hear more of them if they did business under their own names; but they don't. To my regret, the custom has been growing in this country for a good many years now for men to form a separate corporation for each particular enterprise in which they are engaged, and let that corporation stand on its own bottom, if it has one; so that, in the event of failure, the man who stands behind loses what he put in as bottom for that particular corporation, but he is not ruined, his credit is not pledged, and he goes ahead and does it again, if he has something left with which to start another corporation. Many

of them have a dozen corporations all going at once, and sometimes more, each one having its own enterprise. I speak of New York, because I know its affairs best. I know that in other cities of the country, while the mode of the operation differs, in essence the speculation remains the same, and in the City of New York, where we have the building of single-family houses as a speculation, the enterprise is much what it is in smaller cities throughout the country.

That method of building houses is an exceedingly bad method for the person who buys the house, whether for occupancy or as an investment. A thing built to sell and sell quickly is not apt to be built to last. I do not want, however, to be assumed to condemn all speculative builders. Some of them build on honor, and build well, and the person who buys one of their buildings is buying something that is worth what it costs. At the same time, I think it is more common that the thing built to sell quickly is not very good. than that it is good. The buyer of the single-family house. as I know the enterprise in New York and as I have heard about it in other places, pays the builder a very considerable advance upon the cost of the land to the builder. He may pay the builder a moderate profit, 10% to 20% on the cost of the building, but if the builder on the average is going to make any profit in the business at all, he must get a good deal more than that to live, and he gets it out of the land. He pays maybe \$300 for the site of the building, but he must sell it for about \$1500 in order to get out whole with such a profit as to induce men to engage in the enterprise. Generally land bought by the acre must be sold for about five times the cost, and not only that, it must be sold within a reasonable period of time. Time is of the essence of the enterprise. If a man sells half of it fairly quickly and then the other half does not sell, his carrying charges and interest eat up his profit and by-and-by what he has left has to be foreclosed out of his hands.

All this does not conduce to good housing. I heard Mr. Veiller say this morning that the minimum requirements

for housing become maximum habits. I believe that he knows when he says that to be true of a great many cities. I know it is ordinarily true of the City of New York. These builders try to get the very last cent out of the property, and frequently attempt it in a way that is not profitable to them—as profitable as it might be. Once in a while we have a man who has the sense to erect multiple family dwellings, leaving very much more open space and giving them pretty gardens and light, and I think the enterprise will be more profitable, and hope it will be, than if he built over all the land he has and left his courts as narrow as the law will permit him to do. But that is the habit. We have not got good housing that way anywhere.

When the opportunity arises to build at low cost it is generally impossible for the builders to build. When business is generally booming, land values rising, the cost of everything increasing, then is when the lender loosens up and lends money to the builders to erect buildings. Of course the buildings cost more than they would in dull times. If the lenders would loosen up in dull times and let the builders build them we would get buildings for less money than in fact we do. We have had a dearth of decent housing all over the country, and it is due largely to the causes I outlined. I have no cure for it at present in private initiative. I had always hoped that men would be found who would build for investment, but usually investments causing less trouble, with more prospect of gain, are more tempting than the erection of buildings for rent;—at least, of workman's buildings.

One of the reasons that labor has been unstable, has wandered about from place to place, from factory to factory—not the one reason, but one of the reasons has been that wage earners have had mighty poor dwellings in which to live;—the social surroundings, I think, have been poor;—the advantages that men naturally seek about their homes are non-existent, and the workmen wander on. A good many years ago the Pullman Company tried to solve the problem

by building the town of Pullman, making rather elaborate rules, giving their workmen good homes, at low cost, and the enterprise failed, because the workmen did not like being treated in the way they were treated in the town of Pullman. On the other hand, the experiment has been tried of selling houses at moderate cost to wage earners in the hope that thus they would have homes more satisfactory to them and would become anchored to the place, and the labor of the industry would be more stable. That has had some success, but I think its major success has been with the more highly skilled and more highly paid workmen, and perhaps in some few towns of one industry, where the policy has been carefully and intelligently pursued, such as South Manchester, Connecticut.

Taking it by and large the country over, the number of workers engaged in industry who own their own homes is small. The union laborers generally as an organization dislike to buy their own homes, with very good reason, because they are much less able to move if the working conditions are unsatisfactory, and they are not so free to quit work in a body. Those conditions all obtained before the war. They are much intensified now. Under those conditions we have had badly planned houses, both single-family and multi-family. We have had practically none of the social amenities, as they call them in England, that go with the good industrial town. There has been overcrowding, and there has been overcrowding of the very worst kind, not only in great cities, but in comparatively small industrial towns as well. There are in industrial towns men living in temporary barracks and shacks.

The bringing together of a large number of workers with their families in a new place adds very considerably to the value of the land of that place. If the town is poorly planned it adds less than if the town be well planned. I don't think that the town of Gary, Indiana, was well planned by any means, but the bringing there of the population of Gary by the establishment of the United States Steel Corporation

mills and some subsidiaries of the United States Steel has produced a land value estimated to be to-day about \$22,000,000 in excess of the original cost, plus all that has been spent upon public improvements. Even in that poor, miserable city of Lackawanna, New York, there is an excess value of some seven million dollars. These increases of land value are scattered around in the pockets of all sorts of people and have done no one any particular good.

What I should like to see is a plan adopted which will conserve that increment of value for the benefit of the town created by the industry that is there established and the coming to the town of the workers in that industry. We have our opportunity now, if the United States will take advantage of it. I do not say that the opportunity exists in every place where the United States may be required to build houses. It may be that in some places houses must be built scattered in among present existing houses. I hope there is no such place. I should try very hard to find some other solution of the problem before I resorted to that last, worst solution of the problem which must be solved, of providing homes for the worker. Why is that a bad solution? Mr. Olmsted called it the left-over lots of the disappointed speculator. They are naturally not the best lots. Here we have 100 acres, of which 25% is improved with houses and the rest of it is in the hands of the present owner, probably not the fellow who started the development. He has probably busted and blown away long ago. If the United States buys those lots even at what we would call a bargain and puts up houses there, it cannot control the management of the houses already up, and they are a danger to that community. It is just as important for an industrial community that the mental, moral and social conditions of the community should be good, if you are going to get the work turned out, as that the mental, moral and social conditions of your cantonment shall be good if you are going to have good soldiers.

The fundamental and the essential thing that makes for

the success or failure of any community is management. We talk about good city government. Good city government is mighty important, but it does not begin to compare with the management of the houses in the city. If one owner owns a considerable territory, appropriately planned and developed, and manages it well, he can have an ideal community. He can exclude all improper businesses, he can keep the mental and moral and social conditions of so much of the territory as he owns good and sound. He can do for that community what cannot be done for it by any possible individual initiative.

The United States, Mr. Olmsted says, is likely to adopt the first plan he outlined of fiscal management;-that is, the United States buys the land, builds the houses and lets the question of what is to be done with them wait until afterward. In any event the United States must write off, as part of the cost of the war, whatever may prove to be the excess cost of houses erected for war workers. I have a suggestion to make as to how to find out how much to write off. It is not an exclusive method, but it is one, and an important indication of how much shall be written off as war cost. In the beginning the United States erects houses and they cost a certain sum, with the land. It ought not to charge as rent more than 10% on that cost, or a very little more than 10%, neither can it charge more than about 20% of the annual wages of the workers who occupy the houses. Men should not pay more than about one-fifth of their income for rent. So you have two maxims: you must not charge more—you can't charge more—than about one-fifth of the income of the occupant, and you ought not to charge more than a reasonable return on cost. In view of the high cost of buildings, even in spite of high wages, you are not likely to be able to get more than about 10% of cost at this time.

When the war is over, after time enough has elapsed for conditions to settle down and become what we may regard as normal, we can determine the present value.

We will assume that the industry is going on, or that new industries have come to the town, as they would come if there is a fine community of workers there that would like to stay. Industry will always go where there are competent, steady workers. That has been the great desideratum of our large corporations. Conditions, we will say, are normal, rents have been reduced, because wages will fall, Most of us think they will; - perhaps they will not. In that event the problem is even simpler. Base the rents on about one-fifth of the wage earner's income. Capitalize whatever there is at 10%, 11%, or 12%. That is the present value: by so much as cost has exceeded that present value, write it off as a war charge and be done with it. That present value the United States ought to get back, and it may if the property is well managed. It will not if the property is not well managed. If it fritters away its title and lets various and sundry workers buy a small equity, these equities will be foreclosed in a little while and there will be an unsatisfied community, out of which the United States will never get back the fair value of the property. In one way that is a minor consideration, but still let us deal with the question as a business proposition, fairly. We have maintained a suitable management, on theory. We now know the value. The United States is receiving a relatively low interest. The interest should not be more than the United States pays for its money at present, say  $4\frac{1}{4}\%$ . Tenants ought to be able to pay 2% per annum amortization. If they cannot, on the basis of value that has been fixed, then the value is too high and it should be reduced and the excess changed to war cost. Paying the United States, then, about 2% a year, it will take about 27 years to amortize the cost.

If the United States chooses, it can have a corporation formed, without capital stock, and get from the local community men that may be trusted to manage the enterprise, as they would manage a savings bank, as they are managing the local savings banks, or the local religious or educational institutions that are not run for profit. As the United States

gets its money back let the tenants themselves, then or earlier, preferably earlier, as soon as they have got some community interest, take part in the management; not a majority control, but let them elect men to the board of trustees, so that they shall have a voice in the management.

If our plan is successful to the extent that the United States has been paid, we now have whatever income there would be over and above the cost of operation, and it may be spent in those services for that community that every community would like to have and that it would be good for any community to enjoy. There isn't a city in the United States that is spending as much money as it should for the prevention of disease. There isn't a city that is spending as much money as it should for education. isn't a city that is spending as much as it should for dozens of different things that would not pauperize, but would moralize, the community. No community thinks that it has the revenue. Here is a community that may have the revenue to do all these things. I remember well, again and again, year after year, attending meetings of the New York Board of Estimate and Apportionment. That is the body that determines the amount of the annual budget to run the city of New York. As an officer of the city I was concerned in getting the amount of money I had asked for in my budget, and so I heard other men talk about their budgets, and that which perhaps impressed itself upon me most was what was said, year after year, by the Commissioner of Health. I heard a good many of them tell the story, practically all of them told the same story, some a little more picturesquely than others, but it was the same in essence; they said, "We have spent so much money on child care, infant care, that the death rate of infants has declined so much year by year." One year I remember the Health Commissioner said, "I have made an intensive study in a certain territory and the baby death rate there has dropped down"-I can't remember the exact figures, but to about 90 per thousand of babies under one year old, whereas

in such another territory it is over 300 per thousand. Babies' lives are just worth dollars;—that is all! Give me the money and I will save the babies. You can do it in any community. There isn't a city in the country, I don't care how well managed it is now, where the death rate cannot be cut down. There isn't a city that can't be made a better, healthier, more useful city, that will earn more money by spending more money upon it.

#### LAWRENCE VEILLER

Secretary National Housing Association New York City

If I had had a manuscript speech tonight I should have lost it all to Mr. Purdy. The thing I ought now to do is to take Mr. Purdy's topic, for something prevented him from really getting to his subject. He has a very interesting message, as you know. Irrespective of the deep interest, of the manner of his delivery and his personal presence and character, he also has a message. I am awfully sorry he did not give you that message tonight, because he can do it very well: and it is one we all ought to discuss and one we are all deeply interested in: but, never mind, Purdy, you can save it for next year.

Mr. Olmsted said, "Get up and tell them all the things I didn't tell them." The evening is too late for that. I am going to tell you one thing however, that he didn't tell you. and one thing about Washington, one thing he couldn't tell you. I want to say that the American City Planning Institute should be proud of its president and the country as a whole owes a debt of gratitude to Fred Olmsted for the patriotic work that he has done at Washington for nearly a

year.

I have been privileged to go down there off and on and see the turmoil and have a little share in it, and I want to tell you that there isn't any man in the trenches who has done a more patriotic service, under more adverse conditions, than Fred Olmsted has done at Washington. How he had the patience to stand it, I don't know, because the conditions at times were inhuman.

I wish there were time to tell you a lot of the things which he could have told you so well, about the problems they have been discussing at Washington, but there isn't time. I am going to say just one word on the subject he asked me to speak of and a word about Mr. Purdy's subject and then I am going to quit, without delivering the speech I was scheduled to deliver.

Olmsted spoke of the standards that had been adopted by the Federal Government and said he hoped they were going to be carried out. Of course, if they are not carried out, it will be like all our laws in this country; at any rate "they mark the height to which the waters once rose." They do, however, mark great progress. The educational by-product of those standards is something we can cherish.

The Federal Government of these United States, with its hundred million people and more, has declared in unmeasured terms against the tenement house as a means of habitation for the working people of this country. Think what that means, think of the moral effect of it all over the United States.

It has practically outlawed the bunk-house. Think what that means! I read a pamphlet only last week, a defense of the I. W. W. by philosophic men, who were sympathetic to the movement, which said that it was the organization of the man without a home, without a locality, without a wife, without a family, without a government, almost without citizenship, who has no ties to tie him to anything. It attributed this situation to "the sour smelling bunk houses that had driven the men from place to place, because they could not stand it."

The Federal Government, through the work Fred Olmsted and others have been doing at Washington—he describes it as the last two or three months, but it has been about eight months, it is hard to tell where one day begins and another ends, at Washington—has set its face against the bunk house and has said if the Federal Government is to loan or spend money for housing, the men must have decent

places in which to sleep, separate rooms, every room with a window to the outer air, with proper and decent toilet accommodations, and proper washing facilities.

I might recite a great many more points and we could spend a whole evening discussing those standards, which have not been easy to formulate. One, for instance, advising the architect as to the proper number of rooms for a workingman's house. The workingman has suffered in this country by the builder building beyond the workingman's needs and desires, a 6-room, 7-room, 8-room house when he could only afford a 4-room or 5-room one, and all he wanted was a 5-room house; and so with his six and 7-room house he has had to take boarders in order to utilize the rooms and have his house 100% efficient. The bad consequences of that we all know. These are some of the things that these regulations have done.

The problems which Olmsted and his associates have been threshing out and discussing and battling over in a friendly way, disagreeing about and agreeing about, and some days the whole bunch deciding that they will all quit the game, and none of them ever of course doing it, are vitally important. The question of whether you will have alleys, about which Olmsted and I differ very widely—we agree on some things, such questions as Purdy has referred to, such questions as management; such broad questions of policy as whether the Federal Government ought to sell houses at all: such questions as to whether the mechanic called to work in a war industry, which may be temporary, which he thinks is temporary, and which the whole public of the United States thinks is temporary, should be asked to buy a house in that locality which he expects will be wiped out after the war. We have all been speculating about it. Personally, I don't think any of those houses are going to be sold. I don't think the average mechanic is going to buy a house when he is not sure of his job. Organized labor as an organization is opposed to the sale of houses.

Those at Washington that have to do with this thing are

interested in all these questions we are interested in, but to them they are minor questions; they are considering the question solely from the point of view of winning the war. Congress has given money for housing for the purpose of speeding up the war and nothing else.

I want to come back to Purdy's proposition and explain to you what it is. It is a sort of camouflage for the single This Conference did not mention single tax. Oh. no! Purdy did not, you notice. It is also a form of communism. Neither of these terms scare me a bit. It may be a very wise thing to do. As I understood it, Purdy suggested that workingman's houses to be built by government funds were going to cost so much that it would be necessary to write off as a loss the difference between the actual cost of the house and the capitalized value at which it would be fair to sell it. In other words, millions of dollars are to be thrown away as a loss and then the "profits" that come from the enterprise are to be used for education, for charity, for the support of the government generally. I do not know whether Purdy meant to put it that way, but it was an extremely interesting exposition.

I am not a business man, but I don't quite see how you are going to have "profits" out of a proposition when you have to write off as "losses" millions of dollars. You may have an enterprise like Gary, where there is a large unearned increment—that is another thing. You may have noticed, Purdy said, "increment"; you didn't hear a word about "unearned" did you? Not once—You can have a case like Gary, where you have a large unearned increment, and in that case you don't have to write off millions of dollars because the thing doesn't pay.

I want to see the scheme tried. I think it is a most interesting proposition. The single tax as a panacea did not appeal to the public. As a legislative proposition it did not work out. Now, the men interested in single tax come along and have a most interesting plan. They say, why not

take the values that you men have made by living here and working here and keep them for the community, and not have them distributed in the pockets of men, whom Purdy said, "it didn't do any good to"—I have never been in that state.—He wants to keep it all in a fund for the whole town; in other words, Own Your Own Town. That is communism of course. The whole community owns all the real estate. No individual is allowed to own a single bit. Where else could you have a more extreme form of communism than that? It may be a good thing; I don't say it is not.

There is to my mind, however, one stumbling block. What is the predominant motive in the mind of the ordinary workingman in this country when he buys a home? Does he buy it because he wants to live in that particular house the rest of his life, I wonder, or is there in the background of his mind, half-conscious or sub-conscious, the idea that to get a bit of land, to get a home, is the way to get on—every little bit added to what you have makes a little bit more? I wonder if that is not the idea in the mind of the average workingman when he buys a house.

In this plan you are asking an American workingman to put his money into a house on land he does not own, which he never can own, and for which he cannot get the increment in value. Does he want that increment? I believe he does.

I have been just as nasty tonight as I know how to be in a pleasant way. I did it for the purpose of getting a discussion going on a really very important question; which, now that Purdy has got that other topic out of his system, I am sure he will be glad to tell you about. I hope you will put him on the floor.

#### DISCUSSION

MR. PURDY:

I think it was very good of Veiller to stir things up a little. I did not say unearned increment, because it is not unearned; it is earned by the people who lived there and worked there, and I want the fellows that earned it to get it. It is not the single tax. That is too beautiful to be talked about just at this time. Veiller may have misunderstood me, or he may have put something up just for me to talk about a little more. I don't know which. We are all agreed that houses built at this time are going to be excessive in their cost; they are going to cost more than they will be worth in normal times. Mr. Olmsted has told us that in the case of the ship-building plants, in the case of certain munition plants and in the Ordnance Department they are treating the cost of temporary houses as part of the cost of the product. They must and they ought to. It seems to me perfectly legitimate, if permanent houses are built under these circumstances, to treat that part of the cost of the permanent houses that is abnormal as part of the cost of the product, just as much as the temporary house that ought to be destroyed and thrown away.

I agree that a good many people do like to own their own homes. I haven't said a word to discourage it. I am talking about those workmen who do not want to own their own homes and for whom it generally is undesirable that they should; at least they should not buy these speculatively built homes that they pay too much for. The alleged equity they purchase only exists in their own imagination. It is an enterprise where they can keep on paying, paying, paying, and by the time they have paid, the house is worn out and no longer of any use.

This plan is not only a good plan, in my judgment, for the United States at this time, in order to have permanent and contented labor, but a good plan for an industrial corporation that founds a town and wants con-

tented and permanent labor, and I leave it to you whether, when the time arrives that the town is paid for, if those who live in it may not get just as great an interest in the common ownership of the whole town as any man ever gets by owning an equity in a single house. They may have can easily have—a community so much more orderly, so much more attractive than the ordinary industrial town, as those lovely streets through which we passed out near the park are more attractive than the streets that we passed through here in the blighted district. A man who is part of such a community will feel this is my street, this is my park, this is my club house, as they are feeling it in those English towns that have been created in not similar fashion, like Letchworth and Hampstead. There is a sentiment there of community proprietorship, that is better and bigger and finer than the more selfish instinct of owning one ugly little house and neglected back vard.

#### MR. BASSETT:

Mr. Frederick L. Ackerman, of New York, who has met with us at a number of our Conferences in the East, recently made a study of the housing of war working men in England and he came to the conclusion that this country, like England, in order to get speed would have to buy land and build houses. He says that in England they discussed various methods of loans and of private building and then, because it was taking so long and was not effective the Government itself bought land and put up workmen's houses, and there wasn't a steady flow of ammunition to the front until that was accomplished. I don't know the merits of this subject as well as those who have studied it at headquarters in Washington, but I do know that the difficulties of arranging mortgages by the Government will be so intricate and long drawn out that it will not be effective. Some method must be found that is different from the Government lending money on mortgages, because that method will have every drawback that inheres in the purchase of land and

the building of houses by the Government itself. Houses built with Government loans will largely come back on the Government, being built at least 30% over normal costs. To-day, around Newark, the northern part of Staten Island. and near Philadelphia, there is almost no progress being made in housing the workmen. The turn-over of labor is tremendous. To get quick results the Government must adopt simple methods and I for one suspect that results must be reached somewhat the same as in England, by the simple commandeering of land and putting up houses by the Government. To a certain extent, the ideas of Mr. Purdy have been carried out in England, because it is provided by law that the Government can take additional land near war industries as more workmen's houses are needed, at the original value of the land, without paying anything for that increment which comes to the land because of its nearness to the industry and houses already in existence.

## PLANNING A WAR CANTONMENT

CAMP PIKE

# LAWRENCE V. SHERIDAN Philadelphia

#### PRELIMINARY WORK IN WASHINGTON

The declaration of war between the United States and Germany, and the subsequent organization of the National Army afforded an opportunity for the City Planners of America to demonstrate the real practical value of their profession. With the decision to call into service hundreds of thousands of young men came the problem of properly housing them in military cities. The emergency was such as to require this planning to be done with despatch and yet layouts which would be orderly in arrangement, conforming to the topography of the site, and economical of accomplishment, were demanded. The modern school of city planning has stood for intelligent, practical plans for cities, and has reduced their design to a science. Its members were most adequately fitted to undertake the solution of the problem of designing in a very few weeks sixteen communities with an average population of 40,000.

Realizing the requirements, the Advisory Committee of the Council of National Defense called into consultation Messrs. Frederick Law Olmsted, Landscape Architect, E. P. Goodrich, Municipal Engineer, and George P. Ford, Architect, all city planners. Their meetings resulted in the formation of the Committee on Emergency Construction of Buildings and Engineering Works. This Committee, whose Chairman was Mr. W. A. Starrett, included among others Mr. Leonard Metcalf, Sanitary Engineer, and Mr.

Olmsted. Landscape architects and city planners, and sanitary engineers were communicated with immediately to ascertain how many would volunteer their services for the planning of the cantonments. The response was most hearty. Many more than were needed replied favorably. A number were called to Washington at once to assist in the assembling of data and the preparation of the standard diagramatic layouts.

In a remarkably short time an organization was whipped into shape. Colonel I. W. Littell, Quartermaster Corps, was designated as the officer in charge of cantonment construction. In frequent conference with him were the members of the Committee. Under the direction of Mr. Geo. Gibbs, Jr., of Boston, an office force was instituted. Working from data furnished by the War Department, diagrams of the various units comprising a division were prepared, showing the arrangement of officers' quarters, barracks for the enlisted men, stables and storehouses, together with the necessary toilet facilities, and auxiliary buildings. At the same time detailed plans of the standard buildings to be erected were prepared. All of this work was accomplished in less than six weeks.

In the meantime Boards of Officers were busily engaged inspecting sites offered by cities all over the country. These sites were all selected by the middle of June. Some cities, particularly Little Rock, purchased the sites outright, and donated them to the Government free of cost. Other tracts were selected because of advantageous railroad facilities, or other desirable features of location. Naturally, all of the sites differed from each other, varying from very flat to exceedingly rough topography. All were more or less well adapted to the purposes of a military camp, but too little attention was paid to the difficulties which were presented to construction.

Two factors contributed to this partial failure in the selection of proper sites. In the first place too great influence was brought to bear by the communities endeavor-

ing to secure them. Competition of this sort was to be exnected and viewed from the standpoint of civic enterprise, it cannot be strongly censured, but the fact remains that such influences should have had no weight whatever in the determination of locations. At Camp Pike, for example, the first cost would have been reduced several hundred thousand dollars, if the ground had been more nearly level, and the necessity for a great amount of excavation in solid rock had not existed. There were sites available in the same vicinity which would have proved more economical in construction. moreover, the location of the camp four and one half miles from a railroad necessitating hauling materials by trucks until the expensive railroad spur was built, added a great deal to the cost and delayed the completion of the camp. In the second place, the boards did not in all cases consider the adaptability of the sites to the organization of an intelligent city plan. Some of the plans were forced to be cramped or not capable of expansion on account of the natural confines of the tracts. Others had to be content with excessive grades on the main traffic arteries, or else sacrifice orderliness in their arrangement. The appointment of Boards composed of city planners and engineers as well as army officers would have eliminated many of these difficulties. Such a board would have been better able to visualize the completed city in all its aspects.

Coincident with the selection of locations, the city planners and sanitary engineers who were to make the preliminary designs were called to Washington. There many problems were solved in conference and available data was issued for use in the field. Trial layouts were made upon topographies which had been sent in, and the discussions which ensued assisted in the formation, in the minds of the planners of a clear idea of what a city to house an army division would look like.

Besides Mr. Olmsted, the chairman, the following city planners were present in Washington, during the preliminary discussion: Mr. Thomas W. Sears, Mr. Richard Schermerhorn, Mr. A. F. Brinckerhoff, Mr. C. H. Lowrie, Mr. H. J.

Kellaway, Mr. C. F. Pilat, Mr. George E. Kessler, Mr. C. W. Leavitt, Mr. Owen Brainard, Mr. Harlan P. Kelsey, Mr. James L. Greenleaf, Mr. Warren H. Manning, Mr. Edward H. Bennett, Mr. Robert Wheelwright, Mr. J. S. Pray, and Mr. Lawrence V. Sheridan. Of these, fourteen are landscape architects by profession.

By the middle of June preliminary plans were being made for all of the sixteen National Army cantonments located as follows:

Camp Devens, Ayer, Mass.; Camp Upton, Yaphank, L. I.; Camp Dix, Wrightstown, N. J.; Camp Meade, Annapolis Junction, Md.; Camp Lee, Petersburg, Va.; Camp Gordon, Atlanta, Ga.; Camp Jackson, Columbia, S. C.; Camp Custer, Battle Creek, Mich.; Camp Sherman, Chillicothe, Ohio; Camp Zachary Taylor, Louisville, Ky.; Camp Dodge, Des Moines, Iowa; Camp Grant, Rockford, Ill.; Camp Funston, Fort Riley, Kan.; Camp Pike, Little Rock, Ark.; Camp Travis, Fort Sam Houston, Tex.; Camp Lewis, American Lake, Wash.

#### DESCRIPTION OF THE SITE

Little Rock is situated on a plateau on the south bank of the Arkansas River, a stream about 2000 feet in width. At a point about five miles due north of Little Rock, and 300 feet above it, Camp Pike is situated. The tract covers 3034 acres, and is 3½ miles east and west, and 2 miles north and south at the widest points. Extending along the southerly and westerly boundaries of the tableland is the characteristic steep slope, 200 feet high in places. Sharp gullies penetrate into the hill frequently. The stream beds are usually dry but at times of heavy rainfall are filled with rushing torrents, and consequently the sides of the ravines are deeply indented and weathered. All of the water on the steep slope flows into the Arkansas River above the city of Little Rock. From the crest of the ridge, the topography rises gradually but promiscuously rolling to a divide, not markedly apparent,

which extends throughout the length of the camp site. On the north side of the watershed the water flows into Five Mile Creek, a stream having its origin near the northwest corner of the camp site, and flowing through it in a rounda-about course to the eastern boundary, thence into the Arkansas River nearly forty miles below Little Rock. From the north bank the ground rises gradually towards the distant Ozarks.

The whole area is rolling, varying from gentle conformations like those of less mountainous districts to very rugged and sharply broken ravines. Throughout, there are few level areas or even uniform slopes. Underlying these hillocks, outcropping frequently, is a rock crust of sandstone. slate and shale. The strata are broken up and tilted at various angles and examinations show faults and cleavages extending in many directions. Overlaying the rock is a sandy soil, which, when dry, pulverizes into a dust almost as fine as flour. The prevalence of cleavages and crevices in the rock and the pervious character of the fine surface soil contribute to excellent natural drainage, and the multitude of small streams emptying into Five Mile Creek and over the southerly slope insure the rapid disposition of surface water. Even after the heaviest downpour, the soil is soon dry. This condition insures a maximum usage of the drill areas, and probably Camp Pike is superior to most other cantonments in this respect. The fine quality of the dust and the fact that it dries so rapidly causes an almost unbearable condition at times of slight rainfall. The dust is whipped about by the wind and penetrates into buildings and even into lockers and desk drawers. This can be overcome to some extent by oiling but the advantages of good drainage will be counteracted to some extent by the dust nuisance.

Leading from Little Rock is one main highway known as the Batesville-Cato road. It was paved with macadam throughout the greater part of its length, which soon disintegrated under the heavy traffic incident to construction. Other roads lead to the Camp but they are mountain trails

almost impassable to an automobile on account of washouts and sharp protruding rocks. Throughout the camp were a number of roads but they were unimproved and only distinguished from wood trails by the amount of traffic which had more plainly marked them. During the summer the main road was paved with Warrenite—20 feet in width, so that the camp is connected with Little Rock by a continuous pavement except for a gap of a half mile in the town of North Little Rock. This will be paved in the near future.

The 312th Engineers constructed a military road leading from 9th Street in the camp to the Fort Smith Road, thence to Levy, connecting there with the Batesville Road. This road follows fairly easy grades, although following a winding alignment. It furnishes a short connection to Little Rock and to the rifle range and was especially valuable during the construction of the Batesville Road. Other trails lead down the slope at the west end of the camp, and with some grading could be made passable for automobile use. If the camp is permanently used, they will eventually be needed.

#### ESSENTIALS OF THE DESIGN

The available data with which to undertake the design was in diagramatic form, and arranged as it might be developed were the ground practically flat and of regular shape. It contained the following elements:

Eleven regiments of infantry arranged in three brigades and two detached regiments.

Three regiments of artillery arranged in one brigade.

One regiment of engineers.

One engineers' train.

One sanitary train.

One field signal battalion.

One ammunition train.

One supply train.

One aero squad.

One headquarters train and military police.

One division headquarters.

[130]

These were placed in a "U" shape with two main highways, one in front dividing the officers' area from that of the men, and the other, in the rear, the men from the animals and storehouses. A double track railway, eliminated at Camp Pike on account of high construction cost, paralleled the back road and was designed to serve the regimental storehouses. Cross streets were planned every 430 feet and fire breaks of 215 feet width were left between brigades. A regiment of infantry occupied one and one-half blocks: a regiment of artillery and the ammunition and supply trains two blocks each, the sanitary train and regiment of engineers one block each, and division headquarters, field signal battalion and aero squad one-half block each. The distance from the front of the officers' quarters to the rear road was constant for all units. The stable layouts varied in depth from 320 feet for infantry regiments to 1200 feet for the engineer regiment. Subsequently it was decided to add to the standard layout a quartermaster supply depot and a base hospital of 1000 beds capacity.

The real problem was the fitting of the diagramatic plan to the topography of the site. Modification of the standard design was, of course, expected and in none of the sixteen National Army camps was it possible to adhere strictly to this standard. Most of them departed widely from the diagram.

First and foremost in the organization of the plan of a military city, as in any other city plan, comes orderliness. The plan must be logically developed, well connected and following a carefully thought out scheme. This is particularly necessary in a cantonment. Here the entire population works by rule. Orderliness is the keynote from the personal belongings, equipment, and actions of the individual soldier to the division as a whole, A plan not well organized would tend to counteract the well ordered principles of the division. Orderliness does not necessarily mean a rectangular arrangement, although on flat topography, such would be preferable. But it does assume a placing of units so that they

fit in logically with each other, each in its proper place, and easily accessible one to another.

Compactness is probably the second consideration. A compact camp reduces the time necessary for traveling from one part to another. Likewise, it is the cheapest to build. and to maintain, and most easily controlled and administered from the military standpoint. The danger in endeavoring to secure a compact layout is in overdoing it and producing cramped conditions. Open spaces are a paramount necessity. In a wooden camp, they are a necessary measure of public safety, contributing largely to the efficiency of the fire prevention organization. Fires which have taken place already in other cantonments, but fortunately controlled before serious damage was done, have demonstrated the necessity of ample fire breaks to stop the spread of fire. Military drill is another requirement demanding open spaces. Maneuvering of large tactical units can take place at some distance from the barracks, but company evolutions should be performed in the close vicinity of quarters. Formation areas between barracks were provided in the standard unit layouts, but these do not admit of drilling a large company. There must, therefore, be sufficient space near each unit for this purpose. A factor rendering extremely large amounts of space necessary is the military method of having all units do the same thing at the same time. Every man arises at the same time, stands reveille at the same time, drills at the same time, eats at the same time, and so on. Each facility thus carries a "peak load" when it is used and then remains idle for much of the remainder of the day. A distribution of forces so that facilities could be made more constant and less intensive use of would overcome this but probably in the stress of training a great army and the necessity of getting it into shape quickly, a study of the use of facilities would be inadvisable at this time. Recreation demands, in a great camp composed entirely of young men needing out-door exercise, coincide with the drill necessities and make doubly important the provision of large amounts of open space. A tract 600 feet by 800 feet is no more than needed for one of the large infantry regiments composed of 3600 men.

The street system is an element of the first factor—orderliness. Unless lines of communication are easily followed, and connect up the various units of the camp, its administration is hampered. It is necessary that the main arteries be continuous, aligned without abrupt turns and breaks and following easy grades. Ample provision should be made for the rapid movement of troops, both mounted and unmounted, and for light and heavy horse and motor drawn traffic. These necessities presage ample widths of roadways.

The delivery of supplies is a matter of great importance in a large post. Provisions for carrying large stocks of subsistence supplies in the regimental storehouses are not included in the building plans. This necessitates constant movement of goods from the main quartermaster's depot by motor truck or otherwise. A central location is obviously the ideal situation for the warehouses, in that it reduces the average haul and congestion of traffic.

The transportation of supplies from distant points to the camp is a factor demanding careful handling. The connection with the nearest railroad is to all intents and purposes a part of the plan. Unless it is adequately planned, the administration of the camp will suffer. The trackage should proceed directly to the centrally located warehouses where ample yard facilities should be provided. Not only is rail transportation necessary from the freight standpoint, but the movement of troops into and out of the cantonment places a heavy demand upon it. Moreover, the travel between the camp and nearby cities requires a large number of passenger trains daily. There must be passenger stations and capacious areas for loading troops, both men and wagons and horses. A centrally located railroad terminal is evidently one of the most important features of the plan.

Continual authorization of additional buildings for all sorts of purposes has demonstrated very effectively the positive

necessity of provision for expansion. This expansion takes two forms. Individual units are enlarged frequently and this is an additional argument for ample open space within the camp. Also, new units, such as the training battalions, will be added from time to time. All of these changes must be taken care of without disrupting or materially affecting the fundamental scheme of organization of the camp.

A further factor entering into the design, which was little thought of at the inception of the cantonment scheme, is provision of business centers. Post exchanges were noted on the diagramatic plans as parts of the larger units. But no provision was made for a central shopping district. Recreational needs for the men include a theatre, a library. a large Y. M. C. A. auditorium, and probably other buildings of a general community purpose. These may well be combined with stores. A building for the entertainment of women visitors has been built. A large restaurant is contemplated and a hotel has been mentioned. The number of these buildings will obviously increase. Grouped together in a central location, they would serve their purposes most efficiently, and at the same time would add to the appearance of the camp. Undoubtedly a site near the railroad passenger station should be selected for this group if it is at all possible, in order that visitors may be accommodated with the least discomfort. A very careful study should be made of this feature of the design of any future cantonments.

Forest trees exist on all camp sites to greater or less extent. Generally there is an abundance of trees. The advantages of these to the completed camp should be constantly borne in mind by the designer. There must be large drill areas cleared of all trees and shrubs. But the policy often followed of clearing the entire site before construction starts is the acme of short sightedness. These large cantonments will surely be permanent camps. Comfort of the men and officers must be considered. Buildings of the type used are far more comfortable if shaded, and ample shade in the grounds about

the buildings not used for drill, adds at once to the health-fulness, comfortableness and appearance of the camp. Under the stress of emergency construction, it is almost impossible to give careful thought to just what trees should be preserved. It is therefore strongly recommended that the slogan adopted at the start of work at Camp Pike—that a tree can be cut down at any time but that it takes years to grow one—be followed at other camps. Then when the buildings are completed and the grounds are being put in shape, these trees which are in the way may be dispensed with. Clearing should only be done under the supervision of one who has had sufficient experience to know what trees it is advisable to destroy. A blanket contract to cut all trees below a certain size should never be awarded.

#### PREPARATION OF FINAL PLANS

A careful examination of the site selected for Camp Pike was made before the preparation of the first plan. Most of this study was made on foot in order to familiarize the designer with the varying topographical features. A roughly made contour map of the site was available, but this only served to define the main features of the area. The urgency of completing a design necessitated proceeding without a complete topographical survey. Trial layouts were made and their approximate location studied on the ground. A base line was run around the camp following the approximate line of the main roadway to aid in the preparation of the preliminary plan. The steep slope on the southerly side of the camp site placed a natural limit. Directly opposite the slope at the easterly end of the tract, Five Mile Creek runs practically parallel to it. This furnished another barrier in that direction. The Cato Road following a westerly and northerly course was available for use as the rear road for almost a mile of its length. By utilizing the Cato Road and the space between it and the steep slope to the south, it was possible to provide two rows of units parallel with each other and with an open space of 600 feet between. The

north tier of units followed the line of the Cato Road, bending towards the north to the point where the road turned due north. The south tier followed a straight course for more than one mile. Considering only the units called for in the original layout and giving careful consideration to the factors of orderliness and compactness, it seemed most logical to place the remaining units in the form of a segment of a circle connecting the two rows. The railroad branch from the Missouri Pacific Railroad at Levy, entered the camp midway between the two tiers of units at the eastern end of the layout. Some consideration was given to placing the railroad vards in the Five Mile Creek bottoms to the rear of the north tier of regiments, but the ease with which the tracks could be located near the middle of the camp, in the center of a web, as it were, led to the central location. This reduced to a minimum the necessary haul in the delivery of supplies and the radial roads offered rapid "short cuts" from one portion of the camp to another. Drill space was provided in the sectors of the circular layout and on the outskirts of the plan.

In one way in particular the circular plan failed. That was in the provision for expansion. Compactness and orderliness were well developed but the addition of more units would have disrupted its organization. The advantage of a wide space between the rows cannot be overestimated. Its utilization for drill and recreational purposes since the troops have arrived has borne out the wisdom of providing for it.

#### THE STREET SYSTEM

North Avenue and South Avenue divide the officers' quarters from the men's barracks on either side. Paralleling them are South boulevard and North boulevard, separating the men's barracks and the stables and storehouses. The Cato Road runs northwest along the eastern end of the layout and the four main streets branch off from it—North boulevard following the line of the Cato Road for almost one mile and then turning to the left parallel to the streets on the

South side. South Avenue is about two miles long, the other streets nearly as long. Cross Street connects the four main arteries at the north end. About midway of the camp the quartermaster warehouses are located. They are arranged in two rows of five buildings each. Between the buildings are three pairs of tracks on 13 foot centers, the pairs themselves being on 50 foot centers allowing ample space for teams to circulate between them. About the outer sides of the warehouses two broad streets extend, known as North Railroad Avenue, and South Railroad Avenue. Radial streets extend from the railroad streets to H Street and L Street on the north side, and 8th Street and 14th Street on the south side. At 16th Street a road projects to the railroad vards and crosses over to North Avenue joining it at P Street. At 6th Street a street joins with D Street passing under the railroad. The two railroad streets extend parallel to the railroad and terminate in the Cato Road.

At intervals, generally of 430 feet, cross streets connect the avenues with the boulevards and provide access for teams and trucks to the kitchens of the barracks. These are numbered on the south side and lettered on the north.

North and South Avenues serving the officers and men only, were designed primarily for light rapidly drawn traffic. As an eventual accomplishment, a 30-foot roadway was assumed. If curbs were built, this would be sufficiently wide to accommodate all traffic. In front of administration buildings, where it might be necessary to park cars, a space the width of a car and as long as necessary should be provided for standing cars.

The boulevards were designed to carry several classes of traffic. The storehouses are located along these ways and consequently a heavier load will be carried. An 18-foot paved roadway with 12-foot earth strips on either side is provided by the plan between the curbs. The earth strips are for troop movements. Funds were not forthcoming to build them as planned, and great difficulty is being experienced now on account of troops blocking the roads. Between

the storehouses and the barracks a broader space was left than the standard plans showed. This was done in order to provide for a light railway. It was planned to be constructed of light rails and was to carry motor trucks equipped with portable flanges. Flanges are obtainable which can be slipped over the solid rubber tires in a few minutes. The advantages of a railway of this sort are undoubtedly great. The wear and tear on trucks and pavements would be materially reduced and at the same time the speed of delivering supplies from the central storehouses would be increased. The economies were so apparent that the leaving of space for the future installation of such a utility was thought advisable.

Cross streets are, in general, service streets only and do not carry much traffic. Those connecting with the supply department bear a heavier traffic and where possible were made wider than 18 feet—the standard width.

Sidewalks are shown on all streets. None of these have been built by the constructing quartermaster, due to lack of authorization. Many have been built by the regiments, and an endeavor was made to have the commanding general order them to be constructed according to the standard cross sections. This has not always been done, however, and if individual ideas as to walks are carried out, the camp will have a very unsightly appearance.

Alignments of streets were carefully studied in order to avoid sharp curves or breaks. On the cross streets at a few points, it was necessary to introduce rather sharp reverse curves to avoid expensive rock excavation, which may be straightened out later, but on main arteries the curves are of small degree in all cases. The minimum radius for curb turnouts at street intersection is 20 feet, allowing freedom and lack of confusion in turning from one street into another. At Cross Street the radii in the direction of heaviest traffic were made 100 feet.

Grades, as a rule, were slight. South Boulevard between the Cato Road and 13th Street crosses several gullies which

were bridged with stone masonry culverts. The gradient was reduced to not over 7 per cent in each case. By altering the alignment these grades might have been reduced somewhat, but to have reached a minimum of 3 per cent, it would have been necessary to shift the layout over 300 feet in some cases. The natural barriers to the north did not permit of moving the north row of regiments so much, and the shift of South boulevard would then have reduced the open space between the two rows below the desirable minimum.

#### BLOCK LAYOUTS

A layout of blocks of standard width throughout would have been possible but would have forced the placing of many buildings on sharply sloping ground. Some of the structures would have had to have been set on posts over 15 feet in length if so located. This would obviously have been a great inconvenience to the occupants. The problem of placing the buildings so as not to be elevated over eight or ten feet above the ground had two solutions. The sites of individual buildings could be selected without relation to the cross streets of the standard plan, and the streets adjusted to fit them, or the streets could be located so that the buildings facing them would fit the ground. The latter was the policy adopted. It accomplished three things. The buildings fitted the ground; the plan retained a regular orderly form; and the ratio of open space to occupied space was increased. Wherever possible the streets were located along ridges with the ground sloping away on either one or both sides. This resulted in the kitchen ends of buildings being raised but slightly above the ground, and the center entrance being reached by only a few steps. The opposite end of the building having no doorways could be raised above the ground considerably without inconvenience.

Generally speaking, the plan of blocks 430 feet long, expanded where advisable, and with fire breaks between brigades, is satisfactory. But the need for additional blocks, unencumbered by buildings, is very apparent. It is strongly

recommended where ground can be obtained at reasonable expense that a 430 foot block be left open between every two regiments. This space at once serves as a fire break, a drill ground and a recreation area.

#### SUPPLY DEPOTS

The main supply depot is located near the center of the As the map shows, it occupies the throat formed by the divergence of the two rows of regiments. The railroad branches into a vard of six tracks, arranged in three pairs, averaging 2000 feet in length. The central track extends to the hospital, serving en route the heating plant and ordnance warehouses. The depot consists of twelve large warehouses, each 60 x 170 feet with ten foot platforms on either side and two smaller buildings. The roadway next to the storehouses is sufficiently wide to permit of tracks backing up to the platforms without blockading the traffic way. The spaces between the pairs of tracks (50 feet center to center) allow space for trucks to load and unload alongside the cars. Outlets at each end provide for circulatory traffic throughout the area. Entirely aside from the great advantage of a spacious railroad yard as an aid to the rapid and efficient handling of supplies, is its assistance in troop movements. As arranged, six trains can be loaded at one time. Freight trains consisting of flat cars for transporting wagons and guns may be loaded from the ends by means of portable skids or separated into sections of a few cars each so as to be loaded more quickly. The ease of loading troops will be appreciated when orders come for the division to move as a whole. During the organization of the camp when troops were moving from and to other cantonments little confusion has resulted.

#### PUBLIC BUILDINGS

Between 6th and 7th Streets along Railroad Avenue are located the railroad station, postoffice, Wells Fargo express office, the hostess house, a rest room for women visitors, a

photograph gallery, and tailor shop. A restaurant is also to be located nearby. There is little room at this point for other buildings, however. The Y. M. C. A. auditorium is between F and G Streets on North Avenue, and the government theatre and library are on L Street. Originally it was believed that business and recreation buildings would not be needed, but more and more of them will be built. It has already been recommended that in future designs, these buildings, so far as possible, be grouped in a civic center. The office of the division might well be a part of the group although quarters could be removed some distance away. This civic center would be of the greatest advantage in contributing to the comfort of the occupants, the administration and discipline of the camp, and the pleasure of visitors, as well as to the effective appearance of the camp.

#### AESTHETIC CONSIDERATIONS

During the rush of laying out and building a great army camp in the shortest possible period, there is little time left for deliberate study of its aesthetic possibilities. Utility is the dominant objective of the design, and economy, particularly in times of excessive expenditures for war purposes, is the second consideration. But, as in many other designs primarily adapted to the uses to be made of them, a considerable beauty follows as a result of fitness to purpose. Speed required that roads and buildings be located without regard to established grades. The roadways at Camp Pike were laid out to fit the existing ground surface except at stream crossings. The corner of each building at the highest point was placed within twelve inches of the ground, and the remaining foundation posts out to whatever length was necessary. Following the ground lines in this way served not only to preserve the character of the landscape, but also to accentuate it. The buildings on the average are taller than the normal height of the trees about them. roofs are thus visible and the structures being of greater height, increase the apparent scale and carry the picture

further into the third dimension. The general effect is striking, particularly when the trees are in full leaf, and only the upper portion of the barracks are seen.

The rolling plateau, upon which Camp Pike is situated. offers great possibilities for landscape development. It does not lend itself to formal treatment except some of its small partially enclosed spaces. An informal treatment of the site could be carried out at comparatively small expense and would be exceedingly attractive. If the camp proves to be a permanent one, and all indications point that way, appropriations of considerable amount for its development would be justified. To be effective, development plans should be prepared for the whole area under the direction of a competent landscape architect. It would be well for the Quartermaster General to appoint a board of landscape architects to supervise the preparation of plans for the beautification of all of the cantonments. Under such a policy the roughly built cities would be finally developed into really beautiful communities. There can be no question as to the advisability of providing attractive surroundings which contribute to the peace of mind of the troops and so indirectly affect their health. Medical officers attest to the healthful influence of a pleasant environment, especially when the occupants have been recently drawn largely from harmonious surroundings. When the war is over and the camps are used as training places for groups subject to the universal training scheme, there will be all the more justification for early attention to their beautification.

A danger lies in allowing individual regiments to carry out their own ideas with respect to their areas. The spirit is commendable but the result will be patchy without doubt and the aspect of the whole camp displeasing. The appointment of the board of landscape architects cannot be deferred long without contributing to an unpleasant condition which will be harder to correct the longer it ensues.

#### COST DATA

The cost of preparation of both preliminary and final plans of the cantonment, as well as the supervision of layouts in the field, approximately estimated amounted to \$9,382.50. The estimated total cost of the cantonment was \$9,000,000. The percentage of planning cost of the total cost of the camp one-tenth of 1% is believed to be very near the possible minimum.

#### SUMMARY OF RECOMMENDATIONS

That Boards charged with the selection of sites be composed of city planners and sanitary engineers, as well as army officers.

That a study be made of the possibility of securing more constant and less intensive use of camp facilities than as at present when all facilities are used at the same time and lay idle much of the rest of the day.

That a tract at least 600 feet by 800 feet be set aside for drill and recreation for each infantry regiment.

That main traffic arteries be aligned without abrupt turns or breaks and following easy grades.

That supply depots be centrally located.

That spacious track and yard facilities be provided at supply depots.

That provision for expansion of the whole camp and within individual units be made.

That a civic center, composed of stores and public buildings be provided and located in close relation to the passenger station if possible.

That trees be allowed to remain except where space is to be occupied and that clearing be done after completion of the construction, under close supervision. This with a view to preserving abundant shade wherever cleared space is not needed for drill purposes.

That earth strips at least 12 feet wide be provided along either side of rear roads for marching troops.

That space be left next to the regimental houses for a light truck railway.

That sidewalks and roadways be built in accordance with standard cross sections for all streets.

That radii of curb turnouts at street intersections be 20 feet, and where main traffic streets join, 100 feet, if possible.

That standard blocks be expanded as much as necessary to allow buildings to be placed regularly rather than that streets be fitted to irregularly placed buildings or buildings raised over 8 feet above the ground at one end.

That a block unencumbered by buildings be left between every two regiments for drill and recreation purposes, and as a fire break.

That stables be placed regularly and the roof lines stepped so as to follow the contour, rather than placing them to fit the ground. This regardless of the slope.

That broad streets be provided along platforms of storehouses so that tracks may back up to them without blocking the through passageway.

That more space be provided for auxiliary supply-depot buildings about the warehouse district.

That facilities for coal and hay storage be provided.

That remount depots be located on or near a railroad.

That parade ground for a brigade be provided if possible.

That rifle ranges be as close to the camp as possible.

#### DISCUSSION

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# E. H. Bennett, Chicago:

I think it is desirable to say at this time that I believe the success of these cantonments, if I can judge by personal experience in laying out Camp Grant, is based on the fact that there was most splendid cooperation between all who worked on the cantonments, from the Quartermaster down, and that the work was subordinated to the Quartermaster in charge. It is necessary to have a head controlling such a large operation.

There was a very fine opportunity to maintain the principles of city planning and to maintain the finer elements in distinction from those which were purely utilitarian, and I did not want to let this opportunity go by without referring directly to this plan. The topography undoubtedly contributed very largely to the design of this cantonment, but I should beg to have it considered that the center of distribution of material, which grows all the time, is rather dangerously placed with regard to the officers and men who are on either side, and its growth will more than ever tend to break up the central area, your drill ground, and disturb the order of the whole cantonment. I don't say it is possible to do anything else. It is quite possible, however, that this might have been placed to one side and still been the center of distribution. I simply want to make the point that as city planners I think we should recognize that the utility idea is not necessarily inclusive of the form idea, or of fineness of form and arrangement.

## MR. GOODRICH:

The question of the location of the distribution facility sometimes in the center, sometimes at one end, in which latter case the material had in many cases to be hauled from two to five miles and return, is paramount. I think the matter of form should be thrown to the wind. Very largely I believe not enough attention was given to this particular location, nor was enough care given to the location of main traffic ways. I happened to visit one or two camps and the supply department was breaking down because not enough provision had been made for traffic ways, nor for having traffic ways, in proper condition for heavy hauling.

The location of the camp itself was wrong I think in a majority of cases. When Mr. Olmsted went to Washington first it was hoped the city planners would be given an opportunity to help locate camps. They did not get that opportunity, and I think that is one of the reasons why there

was so much trouble, because he prepared a scheme which, if followed, would have eliminated the difficulty with regard to rock, for example, sub-surface, and some of the other things.

#### MR. OLMSTED:

Some of the suggestions embodied in the memorandum of Mr. Sheridan were followed in the original construction. They have been emphasized and others have been added in the revised plans and instructions which have been drawn up as a result of all this experience, under the direction of Major Gibbs, who is a member of this Conference and has been in charge of the Planning Division in the Washington Office of the Construction Division. His name has not been mentioned so far and it really ought to have been, because the steady following up of the sort of thing with which we here in this Conference are chiefly concerned, in its applications, not only to the construction and planning of the cantonments, but the other large undertakings which are being constantly worked out by the Construction Division of the Army, has been very largely due to the untiring labor of Major Gibbs and those who are associated with him in that Planning Division at Washington.

# S. H. HARE, Kansas City, Mo.:

I just want to say a word in regard to the experience I had in Camp Funston. I first went to Camp Funston in connection with the preliminary work and assisted in the general location. We didn't have those problems Mr. Bennett speaks of there, because our camp site was more nearly square. That gave us a chance to locate the Quartermaster Stores on the main line of the railroad and to create a civic centre between the infantry and artillery units. We also were able to get about 12 miles of loop railroad, so that each regiment was served through its regimental store house by the railroad spur. That will

probably save money in the end. I think probably one of the greatest lessons I learned in connection with Camp Funston, and also some Southern camps, where I was this winter for a while, was, first, that we pack the camps too compactly. Funston didn't have area enough. The other idea that kept coming back to me in building these camps was that if we could have determined our street system and got some paving in a little earlier in the game, it would have helped in getting the supplies around. The mud was a great problem.

# CITY PLANNING IN THE ALLIED COUNTRIES DURING THE WAR

## THOMAS ADAMS

City Planning Adviser to Commission of Conservation Ottawa, Canada

The subject that I have to deal with this afternoon is a large and comprehensive one. I propose to deal with it in two parts. I will first show a number of slides and speak to them very briefly, and then address you generally on the subject.

I think that it is not necessary for me to say to any one who has heard me speak before that I do not come before an American audience to lecture them on how well we are doing things in Canada or in Great Britain. I have been visiting this country long enough to know two things, and one is that on the whole you are as good and as bad as we are, and we are as good and as bad as you. Social conditions in democratic countries are very much the same all over the world; they have their weakness and their strength everywhere in equal degree although varied in form. The second point is that I know the time is past when American citizens are not prepared to learn a little of what is being done in other countries, and to appreciate what to copy as well as what to avoid.

I come here from a neighboring federation. We are both at war, and for the time being we are one federation. And what is more, we are part of a scheme of things under which there is being evolved a complete federation of the democratic countries of the world. Why should I be here, and why ought we to hold this conference at the present time for any purpose, except that of carrying out the object for

which we are now fighting? We are at war, and as we are at war we have to cease to amuse ourselves with fanciful theories. We have to get down to business and consider. whether we as town planners have any scientific contribution to make in order to carry on this war with efficiency. When at war we have to build up a naval and military organization. We have to produce food and munitions. Food and munitions have to be produced at home, and the houses in which the people live have a great deal to do with the output of these war materials. We have also to organize for reconstruction simultaneously with defense. or else face the situation that when we have won this war in a military sense our enemies may be able to seize an economic victory from us which will take away largely the fruits of our military victory. To win this war we have to employ expert advice in every field of industry, and the man who dares to call another man a high-brow because he happens to be bringing skilled advice to bear upon a question is not only ignorant but lacking in patriotism. We want the best professional skill as well as the best business capacity. in the enterprises. We want to back up our military power with moral power. Look around your streets and homes and consider how much we can still do to improve the environment of the people to whom we are appealing to give their lives and money for your country and for mine. We are not doing enough to protect physical efficiency and promote technical equipment. We have to bury fallacies of the past, get rid of false economic standards, and promote production and thrift instead of speculation. We know how much we have sacrificed production to the plaything of speculation, and failed to conserve our natural resources.

Why should town planners be interested in these questions? One reason is that as a people one of the biggest bills we have to pay is for municipal administration and land development. One city in Canada spends \$26 per capita per annum for management of the city, development of its real estate, construction of local improvements and other things. I am

going to take \$10 per capita as an average. That is our expenditure in small townships. At \$10 per capita, we in Canada, have an annual expenditure on municipal development of eighty millions,—most of which goes in local improvements and expenses incident to land development, such as supplying houses with water and with sewers, providing bridges over ravines, making bad land into good land. Your expenditure in the States on the same basis would be eight thousand millions, or eight billions, for the United States per annum. And yet you haven't a properly equipped department of municipal affairs in one of your states to look after that expenditure, you have no federal bureau to advise in regard to the many highly complicated problems that arise in connection with municipal government.

We are trying to build up a system of skilled departments in our Canadian provinces, to look after our municipal expenditure. We need more investigation to be made into municipal problems. This year one of our engineers made an investigation of a ward in a city in Canada. He found that with a population of 4,400 it cost the city \$1,213,999, or \$275 per capita, expenditure on development between 1911 and 1917. That was \$989 per improved lot, or \$511 per actual lot included-not inclusive of the value of the land. That was the expenditure by the city. To bring that ward up to proper standard, curb a street here, pave one there, put in a sewer where wanting, it would require an expenditure of another \$603,000, according to the estimate of the city engineer. Now, whereas the tax in that city of 24 mills produced \$56,000 a year for the ward referred to, 5% on the city's expenditure produced \$60,700 a year, thus showing a deficit of \$4,700 on that ward. This was without providing for the 50% extra local improvements needed, or for general maintenance, electric lighting, and service charges. The same engineer took a neighboring ward which was laid out by a great railroad company and we found that the expenditure in the adjoining ward was 421/2% of the expenditure in the ward which had been planned in pieces by speculative

operators in real estate. In other words, by the proper planning of the one ward we have a condition which produces a profit to the community and in the other we have a totally unsound economic condition. This illustration emphasizes the important connection between town planning and housing. This war is going to be won as much by economy, by thrift, by increasing the physical efficiency of the workers, by improvement in the social conditions, as it is by the men who go to the front. As town planners we must help to cheapen the cost of land development and municipal administration; and we must help to provide for the shortage of houses of the right kind.

There are some people who say "Why bother about these things while we are at war? If we lose the war what does it matter?" But who dares to say if we lose the war? If we are going into this war with if's, we may as well keep our boys at home. We are going to win this war, and we are going to give the boys who are fighting for our liberty, and we are going to give their children, something better to fight for in social conditions than they have had. You are going to have thousands of men come back in a few weeks. They are going to compare what they have at home with what they saw on the other side. If they happen to see something that is better than they have been accustomed to they are going to try to get it. When a man comes back from the front, our experiences in Canada is that he is more critical. he wants to know why, when he has been fighting for the country, he cannot get a square deal for his family, sufficient air space around his home at a reasonable rent. He wants to know why these things are, and it is for us to show him and to help him to improve conditions. These men will require coaxing and training. They have been in hell, they have had their nerves shocked; they haven't all their staying power; they have to be trained back into civil life. You won't train them back into civil life by putting them in a congested hospital, or in a slum district. Many of them have to be provided with vocational training. Try to give that training in the cottage in the country, instead of in the institution in the city. Try and get these men in touch with natural surroundings. Try and provide for your returned heroes in village communities planned by men who know how to plan them. This is a war question. These men are going to tell the other fellow whether he should join or not in the next draft, whether he should be wholehearted or half-hearted in the war.

In all allied countries we have not been meting out social justice to the workingmen who have been engaged in our industries. It has not been for lack of desire. or for lack of willingness on our part to give them justice; but we have been too slapdash and inefficient in our methods of laying out our industrial communities. We need to apply science and intelligence to the development of these communities, so that there shall be no question of blighted districts or lack of proper efficiency in our development. You will never be able to solve the question of blighted districts by merely treating it as an economic and industrial question. It is largely a social problem. In St. Louis I think you will find there is, to a certain extent at least, a color problem as the basis of your blighted district problem. You cannot solve this color problem except by better education and environment for the colored people themselves. We want to build our cities in a more scientific way and we town planners need courage to press that view.

I listened to Mr. Olmsted yesterday and I felt that to some extent he was being affected by the atmosphere of Washington. I am not an official in the United States, so I can say things that I could not say in Canada, but there is too much talk and too much fear in Washington about paternalism, socialism, Olmstedism, and other isms, by the men who deal with these questions in a theoretical way. Why don't they say to Mr. Olmsted, or to his able lieutenants, "We are captains of industry, we know how to run a mill or build a ship. You know how to town plan. Go and do it and we will get about our business." We are at war

and this is the time for applying business intelligence, coupled with skilled advice and not the amateur "executive ability" that has been over-estimated.

The housing problem in Great Britain which I have illustrated and described is being carried out under different conditions than in the United States. Great Britain is practically a combination of three states-England, Scotland and Ireland. Outside of that are the dominions of Canada, Australia and others. They are all held together in an imperial federation. You, too, have a federal government that does not correspond to Great Britain. Your federal government corresponds to the imperial federation of Britain. Your state government corresponds to England and Scotland and Ireland and Canada. You are trying to deal with the war housing problem under the federal and not under the state governments as in England. England is dealing with its housing problem, Scotland is dealing with its housing problem. Canada is dealing with its housing problem, except in a few cases where the ministry of munitions is building the houses for its own workers. I do not suggest that it is practical for you to do that now, but I do suggest that your federal housing policy should aim at ultimate decentralization into units of administration corresponding to your states. A federal bureau is needed to advise, to help with money, to assist with experts like Mr. Olmsted, the state town planning and housing boards. Each state should be entrusted as far as you can, with due regard to political exigencies, to control housing operations through the municipalities, who should be made responsible for local administration. In England no national money is given to individuals or private companies. The aim is to give the national money to enable the municipality to solve its own housing problems. The state says to the municipality "You tell us how many houses you want. We will give you the money but you will build them, and as we are at war, we will pay 75% of any loss you may incur in building as a result of war prices."

In regard to directing the munition towns of Gretna and Woolwich, the municipality has no control. The work is done under the direct control of a department of the government, which corresponds to your federal government. At Rosyth the control is vested in the local Government Board of Scotland, corresponding to a state department. There are two men in control; one is the chief town planning inspector of the local board of Scotland and the other is the resident town planner and architect. There is no large bureau, with complicated machinery; only two men. When at war we must have the best experts to administer and have confidence in them. This is not a time for political appointments or for bickering over personal trifles. It is a time for energetic pursuit of business on business methods.

As you know England has a reconstruction ministry, although most of England is engaged in the actual process of war. Under that reconstruction ministry there are six or seven branches one of which deals with town planning, housing and social reconstruction after the war. That branch is devoting itself to the problem of how to reconstruct Britain industrially and socially. In Britain they will require from 60 to 300 million pounds, or \$300,000,000 to \$15,000,000,000 for housing when the war is over, to provide for shortage of dwellings and for the reconstruction of slums. That money will have to come from somewhere. It is realized that the working classes will want something better, after they have been fighting for their country, and that slums do not pay.

Now, we in Canada and the United States have to get busy on this question. Your sons and ours sons are fighting this war; not for us, because we will get little benefit from it, but they are fighting it for our children and our children's children. While we are going to win the war for our children, let us also strive and give them some of the real fruits of victory when the hour of triumph comes.

#### DISCUSSION

H. U. NELSON, Minneapolis:

I understand that just now city planners are favoring multiple houses for economic reasons. But even so, I believe that if city planners took a more decided position in favor of single-family dwellings we could make more progress in that direction, and from a sociological standpoint there is no doubt that single-family dwellings are the better ones. If you establish a standard of life wages will tend to approximate that standard. While houses may be more expensive for a time, the ultimate effect will be that the wages of the workingman will approximate what the community considers a decent standard of living. If city planners look with disfavor on multiple housing it would be a great assistance in promoting home ownership and home ownership is the best thing to produce good citizenship. Real estate men are guilty of all the sins which have been charged to them, as far as speculative building is concerned. At the same time they are trying to learn and a good many real estate men realize now that there must be a larger regard for community welfare, and there must be more governmental regulation. If city planners could reach the real estate man with the information of the kind which is being disseminated and discussed here, it seems to me that you would most directly benefit the community.

# MR. ADAMS:

I think it would be undesirable to have any misunderstanding about the pictures which I showed of what are called multiple dwellings. The prevailing English type consists of multiple dwellings or groups of houses. That does not mean that it is regarded as the best type to use. You say that the other is practicable and more desirable. I also believe that the individual home is a very good thing. I wouldn't if I could help it, live in a row or group myself. At the same time, we have got to remember that the in-

dividual home for the workingman who can only pay \$15 to \$20 a month is impracticable, if it is built according to what we regard as minimum standards for healthy housing. He has, in practice, to do without proper sanitation or sacrifice durability of construction, in order to enjoy the advantages of the separate building. On the other point I am entirely a believer in home ownership, but do not always believe in mortgage ownership. The average working man does not own a home—only a mortgage. The average man who buys a lot on the installment system and builds a house out of his earnings simply owns a mortgage and the name of a home. Let us encourage every man to own his home, but do not differentiate between the man who pays rent and the man who has to pay interest on the mortgage. There is no distinction at all. The only difference is when one man wants to leave the district he says to the landlord "Good-by." and the other man has to say "Good-by," to the mortgage and some of his capital.

With regard to real estate: this Institute has cultivated the interests and the friendliness of the real estate profession as much as it could possibly do, and at nearly every one of our meetings there have been real estate men present. We have welcomed them, we have had papers from them, we have tried to meet their point of view, and they have tried to meet ours, and in time of war we are as one on the real question before us. The real estate man wants to do the best for the country; so do the town planners. But it is not possible for any real estate man owning a few acres or a few lots to secure the best results for his city in the matter of planning. He can only secure that result by co-operating with others under municipal supervision. I think we have to acknowledge that the real estate profession itself has undergone a considerable change of outlook during the past few years and have shown themselves capable of rising to the best that is in them as American citizens. I am sure I speak for the members of the governing board, when I say that we welcome their co-operation.

# F. F. McNeny, Dallas, Texas:

As a real estate man I came to this convention to find a solution of the blighted business district problem. I have been told where they exist but I realize that there are some in every large city. I know also that when these districts become blighted values go down and taxes stay up and rental values go down. A land owner cannot get, therefore, a good class of tenants and there is no incentive for the land-lord to improve the property. It is also hard to get any cooperation among the property owners in the district. I realize the limits of the problem but I have not yet discovered how the districts can be reclaimed.

#### MR. PURDY:

I think the answer to Mr. McNeny's question depends on the blighted district and the kind of blight. As I went through one of the blighted districts of St. Louis that lies to the eastward of Grand Avenue, the general impression made upon me was that most of the buildings there are residences of considerable cost at the time they were built and that the sooner they are regarded as not only valueless but a menace to the community the sooner will the blight be removed. The worst kind of a building as a rule that can be used for housing is an old residence designed for one family which houses a half dozen families. That appears to be the condition east of Grand Avenue, and as time goes on that condition is likely to be worse. Where those old buildings are set back from the sidewalk line you are likely to see very ugly additions poking out from them, one and two stories high, and soon you will have a street that is not likely to serve a very useful purpose. I am inclined to believe that if one person owned four blocks on this thoroughfare it would be money in his pocket to scrape all these buildings off, even if he did not wish to improve them himself, and offer the lots for sale presumably for business buildings.

#### MR. ADAMS:

I just want to say with regard to that that in European practice it is not found possible to solve that problem, except by the method which Mr. Purdy has referred to. It is not attempted to clear the buildings off. What happens is this: the buildings are assessed at their revenue producing value in fairness to the owners. I think that should be applied here. I don't think it is right the owners of blighted districts should go on paying taxes on values they once had, but of course they should be compelled to demolish the buildings when they become a nuisance.

#### MR. PURDY:

In the City of New York we have about 75 or 80 different assessment districts, assessed by men under civil service appointment, removable only for cause, and fairly docile to instruction. For 11 years I instructed those fellows every year that when a building had ceased to be able to earn a sum which when capitalized, would equal the capital value of the land, the building had ceased to have any value at all, and it should merely be indicated in the assessment by a nominal sum, about one year's rent. I believe that the effort put behind that advice by myself and associates produced very large results. At the same time, it is one of the hardest things in the world to get the assessor to assess a building that cost \$25,000 for \$1,000 and a similar building erected in the same year, which cost the same amount of money and is in the same physical condition, three blocks away, for \$15,000. Frequently that ought to be done, because that building three blocks away may earn its living and the other one may cumber the ground. I have one remedy to suggest to you to take home. It is vital that you have your land separately stated in the assessment of real estate. If you have land and building lumped together, you can't put your finger on the sore spot with certainty, but if you have the land value so much and the

total value so much, it is easier to get that error corrected. Of course, you ought to have your assessments made annually, otherwise you will never catch up with the procession.

# WATERWAYS AND CITY PLANNING

#### SIDNEY J. ROY

Secretary, Mississippi Valley Waterways Association St. Louis, Missouri

Transportation is the lifeblood of commerce and commerce lays the foundation of our civilization. Commerce flows along lines of least resistance, and if you don't have the lines of least resistance commerce will not flow. Cities are built by laving toll on the exchange of commodities and by creating value by manufacture. That city that plans itself and has planning done for it and does not take into consideration how the commerce is going to flow in and flow out, will plan something that cannot live, because you have to have the lifeblood flowing through the veins to keep There are some second or third class a life sustained. cities in the world that are not on waterways, but all of the great dominant cities of the world have been built either on the sea coast, or on navigable waterways. In the Middle West the great emigration that flowed west through Ohio flowed over the Ohio River, and the migration that flowed to the Northwest went out the Lakes, and you can see the influence of this water-borne commerce on the civilization of the West.

The building of the Erie Canal by the State of New York was the most far-reaching piece of inland construction, or internal improvement, ever built anywhere in the world. It was built by New York in order that New York could compel the commerce of the Northwest to flow down through the port of New York and pay toll to New York. When it was built New York was the third largest city in the United States, but on account of the influence of the Erie Canal, the city began to grow as a jobbing center, a manu-

facturing center, then a financial center, then a publishing center, a printing and art center, and today stands as the metropolis of the world, by virtue of a little strip of water across the State of New York. New York is rebuilding the Eric Canal into the State Barge Canal, at a cost of \$154,000,000, for what reason? In order to compel, and to continue to compel, the commerce of the Northwest to continue to flow in and out through the port of New York and pay toll to New York.

The city that plans without a view to the utilization of its waterways, their beautification and utilization along practical lines, is building in the face of facts that the whole world has recognized for hundreds of years. St. Louis is at the cross-roads of the greatest inland waterway system in the world, and no city has neglected her waterways to such an extent as the imperial City of St. Louis, and her growth during the past 20 years has been held back by the fact that she did not recognize and utilize her greatest highway. St. Louis will have its maximum development as an industrial and commercial center only when it develops the Mississippi River to its maximum capacity as a carrier of freight.

Next to the river, where St. Louis had its initial growth, is now a deplorable condition. That is true of the front of most of the cities on rivers. In Chicago, where the Chicago River runs through the heart of the city, is one of the worst conditions of city planning and economic development anywhere in the civilized world. New York today is holding back the efficiency of a continent and a nation because she did not plan incident to her waterway development. Philadelphia, Baltimore, New York, Chicago, Boston did not plan in a broad, comprehensive and national way for waterway fronts, and are today holding back the efficiency of a whole people in fighting the battle for the supremacy of democracy. You can run the railroads down to the wharves at New York, Baltimore, Philadelphia, Newport News, Boston, but there the congestion comes. The whole efficiency of the

nation depends upon bringing the commerce from the hinterland and reaching the waterways at the first possible point, and relieving the transportation system by rail and turning it over to the waterways.

The movement in the Central West at the present time for the use of the waterways grows out of economic necessity. You gentlemen from the East, I want to leave this with you: the freight rates against the Central West are such as to stifle the industrial and commercial development of this part of the country. You can ship manufactured products from New York through the Panama Canal to Frisco 35% cheaper than you can from here direct to Frisco. That means a manufacturer in Boston can put a manufacturing plant in St. Louis out of business. You can ship shoes from Boston to Galveston cheaper than you can from St. Louis to Galveston. That means, unless we use the inland waterways and plan for the conduct of the commerce of the West with the waterways, that this section of the country will be a provincial interior manufacturing center. We haven't any notion of permitting anybody to force us into that situation. The West is determined that it shall have, and have now, all the kinds of transportation, and the equipment for the transaction of business, that anybody With only railways we cannot build an industrial and commercial life in the West comparable with the splendid equipment you have on the seaboards. Those cities that have all kinds of equipment in the way of transportation for the prosecution of business are the cities that will inevitably control the political, economic and industrial life of this country. The universities and great educational institutions are built out of the accumulated wealth of the country, and you cannot pile up in the Mississippi Valley the accumulated wealth of the Mississippi Valley unless you have efficiency. I will say to you that the West and the Mississippi Valley country are determined to develop their transportation facilities, so that in the days to come we will bring the commerce of the West and let it flow down

through the Mississippi Valley, and pay toll to the Mississippi Valley, and eventually build in the Mississippi Valley those great dominant institutions of learning, commerce and art that will enable us to take our rightful place in the civilization of the world.

# OFFICERS OF THE TENTH NATIONAL CONFERENCE ON CITY PLANNING

President, Frederick Law Olmsted, Fellow American Society of Landscape Architects, Brookline, Mass.

Vice-President, Nelson P. Lewis, Chief Engineer, Board of Estimate and Apportionment, New York City.

Secretary and Treasurer, FLAVEL SHURTLEFF, Boston, Mass.

# RESOLUTIONS ADOPTED BY THE CONFERENCE

After-War Problems of Reconstruction

Whereas, it is evident that when the war is over, many problems of readjustment will need to be solved; and

Whereas, the British Government, foreseeing similar difficulties, has appointed a Ministry of Reconstruction; be it

Resolved, that the American City Planning Institute, in convention assembled, urge upon the President of the United States the early consideration of such questions and the appointment of some official body to deal with the matter.

Whereas, changed industrial conditions after the war may necessitate the starting of vast public works, and such improvements require time for maturing adequate plans, be it

Resolved, that the American City Planning Institute urges on the Governors of the various states and the Mayors of the

various cities that the planning of such work be undertaken at this time.

# Appreciation of War Service of Frederick Law Olmsted

Resolved: That the American City Planning Institute place on record its appreciation of the patriotic, effective and devoted services rendered to the country by its President, Frederick Law Olmsted, and the planning and development of the cantonments and the housing of the industrial army.

#### RESOLUTION OF THANKS

Resolved: That the American City Planning Institute extend to its hosts the thanks of the Tenth National Conference on City Planning for the generous hospitality which they have shown. The interest they have demonstrated in city planning by the excellent execution of city planning projects and the broad foresight shown by their plans for further work have made the Conference one of unusual interest, benefit and stimulation.

## PUBLICATIONS OF THE CONFERENCE

#### PROCEEDINGS

(Uniformly bound in cloth)

The contents, consisting of papers and discussions, are not here given in full.

# ROCHESTER CONFERENCE, 1910. 182 pages . . \$1.50

The nature of city planning; Congestion of population, its causes and its relief; The circulation of passengers and freight; Some problems of legal and administrative procedure.

# PHILADELPHIA CONFERENCE. 1911. 293 pages . \$1.50

Location of public buildings in parks and other public open spaces; Buildings in relation to street and site; Condemnation, assessments, and taxation; Water terminals; Street widths and street sub-divisions.

# Boston Conference. 1912. 232 pages . . . \$2.00

The meaning and progress of city planning; Paying the city planning bills; The problem of the blighted district; The attitude of the engineer toward city planning; Control of municipal development by "Zoning".

# CHICAGO CONFERENCE. 1913. 273 pages . . . \$2.00

A city planning program; A survey of the legal status of New York City with relation to city planning; Organization and functions of a city plan commission; Transportation and city planning; Distribution of the cost of Kansas City parks and boulevards.

# TORONTO CONFERENCE. 1914. 350 pages . . . \$2.00

Water front development; Protecting residential districts; Utility of the motor bus; Size and Distribution of playgrounds; City financing and City planning.

# DETROIT CONFERENCE. 1915. 302 pages . . . \$2.00

Best methods of Land-Subdivision; Constitution and powers of a City Planning Authority; The Engineering Side of City Planning; The Architectural Side of City Planning; Six Years of City Planning Activity; The City Plan of Detroit.

# CLEVELAND CONFERENCE. 1916. 275 pages . . \$2.00

The Automobile and the City Plan; The Financial Effect of Good Planning in Land Sub-division; State, City and Town Planning; Districting by Municipal Regulation.

# Kansas City Conference. 1917. 306 pages . . \$2.15

Interurban passenger terminals; The Industrial terminal; Street widening to meet traffic demands; Relation of traffic ways to parks and boulevards; The treatment of water courses in the city plan; City planning in small towns; A state campaign for city planning; Districting; Constitutional limitations on city planning powers.

#### CONSTITUTIONAL LIMITATIONS ON CITY PLANNING POWERS

## HON. EDWARD M. BASSETT

Special Counsel of the New York Zoning Committee

An authoritative treatment of the legal status of city planning; clear to laymen, brief but comprehensive, and with a collection of cases covering such subjects as districting, excess condemnation, building lines, and billboards.

16 pages, 20 cents a copy.

## CLASSIFIED SELECTED LIST OF REFERENCES ON CITY PLANNING, 50 CENTS

This list of about 1,000 references was prepared in 1915 by Theodora Kimball, Librarian of the School of Landscape Architecture, Harvard University.

To bring the list up to date typewritten supplements have been prepared by Miss Kimball as follows:

- 1. March 1915 to March 1917.
- 2. March 1917 to April 1918.

[167]

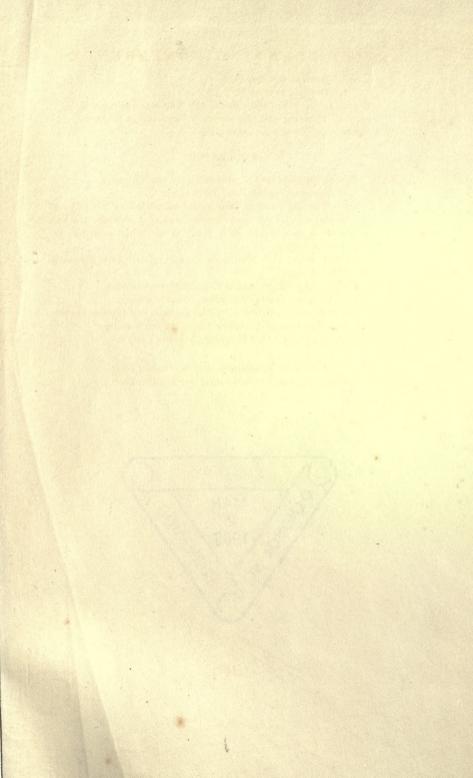
- 3. April to October 1918.
- 4. October 1918 to May 1919.

Copies are on file at the office of the National Conference on City Planning and the secretary can arrange to have copies made at a reasonable price.

#### BULLETINS

- No. 1. Paying the Bills for City Planning, 10 cents a copy.
- No. 2. City Planning Legislation. (Out of print).
- No. 3. City Planning Studies (nine plans submitted at the Chicago Conference for an ideal development of a 400-acre tract of land in accordance with the city planning principle, 30 cents a copy.)
- No. 5. Certain Aspects of Municipal Financing and City Planning.
  (Out of print).
- No. 6. Provision for Future Rapid Transit, 10 cents a copy.
- No. 7. Rapid Transit and the Auto Bus, 10 cents a copy.
- No. 8. The Size and Distribution of Playgrounds and Similar Recreation Facilities in American Cities, 10 cents a copy.
- No. 9. State, City and Town Planning, 25 cents a copy.

All the above publications may be obtained from the Secretary of the Conference, 60 State St., Boston.





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